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THE NEW HANDBOOK
OF
DOSIMETRIC THERAPEUTICS.

BURGGRAEVE.

TRANSLATED BY
H. A. ALLBUTT, M.R.C.P.

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THE NEW HANDBOOK

OF

DOSIMETRIC THERAPEUTICS;

OR THE

Treatment of Diseases by Simple Remedies;

A WORK PARTICULARLY DESIGNED FOR PRACTITIONERS.

BY

DR. AD. BURGGRAEVE,

Emeritus Professor of Ghent University; Senior Surgeon to the Civil Hospital, Ghent;
&c. &c.

TRANSLATED FROM THE FRENCH, AND EDITED,

BY

HENRY ARTHUR ALLBUTT, M.R.C.P.E., &c.,

Laureate (Silver Medal and Diploma of Honour) of the Institut Libre de Médecine
Dosimétrique of Paris;
Corr. Member of the Sociedad de Medicina Dosimétrica of Madrid;
Foreign Associate of the Society of Commercial Geography of Oporto, &c.;
Physician to the Institution for Skin Diseases, Leeds.

THIRD EDITION.

LONDON: GEORGE STANDRING, 8, FINSBURY STREET.
LEEDS: JOHN WHITEHEAD & SON, 17, TRINITY STREET.

1884.

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"A hint might well be borrowed by our pharmacists from the charming little sugar-pharmacies of Dr. Burggraeve, for what he calls his Dosimetric system. A well-assorted selection of sugar parvules and granules impregnated with all the various alkaloids and active principles and their salts could then be carried in the coat-pocket, or could lie on the study table, and enough medicine for an army could be contained in a moderate sized cabinet. We have no doubt that the time is approaching when a surgeon's dispensary need not, for all practical purposes, occupy more than a corner of his study, and when ordinary dispensing will become a scientific manufacturing art, supplying ready to hand about three or four score active principles diffused in sugar granules, by the combination of which all the exigencies of the most refined and intelligent practice will be sufficiently met."

British Medical Journal, No. 954, April 12th, 1879.

B95a
1884

PREFACE TO THE THIRD EDITION.

THE demand for this work being now so great, it is my pleasing duty to announce that the Second Edition was exhausted within a few days of its publication. This affords me extreme gratification, as being a convincing proof that Dosimetry is advancing with giant strides, and is likely ere long to be established in this country on a firm and stable basis.

In the near future, Dosimetric Therapeutics will be recognised by all physicians as the very quintessence of medicine,—a system of healing the study of which no conscientious and enlightened practitioner would think of neglecting. The public, too, will learn to distinguish between Dosimetry and Homœopathy, and will not be so ready, as at present, to confound the two. Dosimetry, whose medicaments strike direct at the roots of the disease, removing the cause, and at the same time attacking the effects or symptoms as they arise,—medicaments acting by physiological catalysis,—is far removed from Hahnemann's mystic system, which is based upon the erroneous ideas that "like cures like," and that the potency of medicaments is increased the nearer they approach the decillionths in measure. Far more rational is Dosimetry, which measures its remedies to the disease, and to each individual susceptibility,—which gives no more than is needed, but always enough.

65523

PREFACE TO THE THIRD EDITION.

The important discoveries of Pasteur, Koch, and other workers in germ pathology, having conclusively demonstrated that cholera, tuberculosis, and the various zymotic fevers depend upon, and have their origin in, the presence of *bacilli* in various organs and fluids of the human body—we are irresistibly led to the conclusion that Dosimetry will soon be recognised by the State as a most important factor in preventive medicine. The alkaloidal treatment, as practised according to the rules of the Dosimetric school, by attacking the cause of every disease, is enabled to destroy the *bacilli* and prevent their further development. Furthermore, each individual system can be so fortified by a judicious blending of Dosimetric medicaments, that it will become possible for persons to reside in the most deadly climates with impunity, for the simple reason that the various species of *bacilli* will be unable to live and flourish in such specially protected individuals. *Bacilli*, like plants, can only live in certain soils,—make the soil unsuitable for them, and their death is certain.

In this Edition I would call special attention to the value of *Euonymine*, recently added to the Dosimetric Pharmacy. I have found it extremely useful, administered either alone or in combination with strychnine, as a hepatic stimulant. In atony of the stomach it works wonders. It is also worth a trial in both acute and chronic bronchitis, as it is a valuable tonic expectorant. The administration of two or three granules of *euonymine* at bed-time, followed in the morning by a full dose of Chanteaud Seidlitz in a large glassful of water, is an almost certain remedy for bilious headache.

The coming spring is to witness the establishment in London of a Society of Dosimetric Medicine. This will do h *to* call the attention of physicians to the new method;

and will, perhaps, tend more than anything to promote the study of Dosimetry, and cause an examination into its claims on the part of the medical faculty.

Dr. Louis J. Taricco, of London, in the November number of the *Journal of Medicine and Dosimetric Therapeutics*, suggests that a Dosimetric Hospital be founded in the metropolis. I would cordially support his suggestion. Such a hospital would be of immense advantage. The clinical results obtained therein would be so convincing, that in a few years Dosimetry would become the established medical practice of the land, and every town would possess its Dosimetric hospital or dispensary.

HENRY ARTHUR ALLBUTT.

24, Park Square, Leeds,
November 19, 1883.

PREFACE TO THE SECOND EDITION.

THE first Edition of this work being now completely exhausted, I have considered it advisable to issue a new Edition.

Medical practitioners in Great Britain and India are gradually awaking to the fact that there is more in Dosimetry than they previously thought. Every month now brings physicians of experience to the conclusion that in Dosimetric Therapeutics they have a much more certain means of curing their patients.

Patients, too, are also beginning to find that the Belgian Professor's system works wonders in a short time; and is, besides, much more rational, scientific, and pleasant than the globules of the homœopath or the crude and uncertain drugs of the allopath. Thus practitioner and patient are becoming alive to the fact that a great change in Therapeutics is impending, and which will ere long entirely alter the old systems of medicine.

It is to educate the young practitioners of the day in the doctrines of the new school that this work is issued. It is a thoroughly practical book. If it will only lead them to experiment according to the rules laid down, their conversion to the system is certain, as the clinical results obtained will be much more brilliant than under the old hospital systems of the rival schools.

I am constantly receiving letters from medical practitioners in various parts of the world, asking for fuller information concerning the treatment of complex cases, and begging for information concerning what medicaments should be obtained. All this tends to prove that the medical world is beginning to inquire.

Since the first Edition of this book was issued, M. Chanteaud, of Paris, has added to the Dosimetric Pharmacy a large number of alkaloidal granules, all of which deserve trial. The "arms of precision" of the dosimetrist have thus been greatly increased. On account of their unstable character, the granules of Iodide of Arsenic have been withdrawn. This is a pity, as they are extremely useful in many skin affections. To meet this difficulty, however, I may mention that I have arranged with Mr. Yewdall, pharmacist, Leeds, to manufacture a solution of the Iodide of Arsenic, each dram of which will contain one milligramme of the Iodide.

The treatment of some of the pernicious intermittent fevers of India demands a few words. The stage of pyrexia must be vigorously attacked by aconitine, veratrine, and arseniate of strychnine: a granule of each together every quarter of an hour. The period of intermission requires very special treatment. Here the hydroferrocyanate of quinine must be given in doses of at least six granules every half-hour, combined with two granules of arseniate of quinine, and one or two of arseniate of strychnine. I would also advise the administration every hour of one granule of arsenious acid and one of salicylate of quinine. The Chanteaud Seidlitz in lemonade or in orange-flower water must be allowed as a drink throughout. A few granules of sulphide of calcium should be given daily, one at a time, in both stages of the fever.

In gonorrhœa a judicious combination of cubebine, piperine, and benzoate of soda, with occasionally cicutine and digitaline, will often work wonders. The bowels must be kept open by means of the Seidlitz Salt.

The internal treatment of syphilis in its primary form is simple,—one granule of protiodide of mercury six times a day. Secondary symptoms should be treated by the bi-iodide of mercury,—one granule six or eight times a day. In tertiary syphilis, the administration of one granule of iodoform every half-hour deserves a trial.

HENRY ARTHUR ALLBUTT.

24, Park Square, Leeds,
October 7, 1883.

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TRANSLATOR'S PREFACE.

DOSIMETRY (from the Greek, *διδωμι*, I give; and Μετρον, a measure), is a system of therapeutics which is likely ere long to revolutionize medical science and practice. As yet, few medical practitioners in this country know anything concerning it; and even those who have heard of it, have, at best, but a very vague idea as to what it is, and what it can do for suffering humanity.

Yet its advantages in comparison with all other therapeutic systems are immense; and, when understood, will cause it to be adopted by every intelligent physician, whose highest aim is the cure and relief of his patients.

It may be well to mention some of the benefits conferred by Dosimetry, and which give it a claim to universal attention on the part of mankind.

The jugulation, or cutting short at their outset of all acute diseases (fevers, inflammations, and congestions), is one of the greatest feats of Dosimetry. That this can be accomplished may seem strange to those who have become sceptical as to the curative powers of the crude and nauseous compounds of the official pharmacopœias, or of the pleasanter, but frequently mythic medicaments of Hahnemann, and who have consequently drifted into dangerous expectancy, a position occupied by many otherwise able and experienced physicians. Yet there is not a fever or an inflammation which cannot be subdued when attacked sufficiently early by the defervescent alkaloids employed according to the Dosimetric method.

Remittent and continuous fevers can be made to yield to the alkaloids: aconitine, veratrine, strychnine, digitaline, etc., almost as readily as intermittent fevers yield to the alkaloid of the cinchona. The experience of thousands of practitioners in Belgium, France, Spain, and Portugal, and in the pestilential countries of South America, has proved this fact. Typhoid and typhus have been jugulated in from four to seven days; yellow fever in three days; and rheumatic fever in four days. Severe inflammations: meningitis, pneumonia, pleurisy, peritonitis, metritis, cystitis, etc., have very frequently been cut short in a few hours. Certainly a system of therapeutics which is able to prevent acute diseases from proceeding beyond their dynamic or functional stage, and which opposes the appearance of horrid anatomo-pathologic lesions, which are often the forerunners of death or of life-long suffering, should be adopted with enthusiasm by the whole of the medical profession without exception. If the jugulation of acute diseases was all that Dosimetry could do, that alone should be sufficient to recommend it to every practitioner.

Dosimetry, however, will often succeed in effecting a cure in chronic or diathesic diseases, where other treatments have failed. The reason of this is that the patient's vital powers are always sustained from the very commencement of the treatment, and in addition, every symptom of his complaint is attacked as soon as it appears. The sufferer is placed at once under two kinds of medication: the *predominating*, which has reference to the *cause* of his malady, and the *variable*, which addresses itself to the *effects*, or *symptoms*.

Even organic diseases—those lamentable degenerations of vital organs—may be retarded by a wise method of treatment: such as by maintaining the strength, improving the condition of the blood, keeping up the appetite, facilitating normal excretion and secretion, and by the prompt jugulation of fresh congestions and inflammations, threatening hitherto healthy structure. Dosimetry can do more for the relief of patients suffering from various anatomo-pathologic lesions than any other therapeutic system. Though it may be impossible to cure an organic disease involving some vital part, yet life may be prolonged, comfort secured, and the poor patient's strength sustained for an indefinite period by a skilful and intelligent employment of the Dosimetric granules.

Dosimetry never debilitates. It is not a system based upon bleeding, blistering, fasting, and purging, making these the foundation of all treatment, but it aims in every disease, whether acute or chronic, to sustain the vital powers. If, in any special case, debilitants are required, it must always be borne in mind that these latter are but "necessities of the moment, consequently, the exception, and not the rule," and that every lowering measure must always be preceded and followed by the vital incitants: strychnine, etc.

Professor Burggraeve informs us that "Dosimetric medicine is the art of appropriating remedies to the nature and progress of diseases, to their symptoms, and to individual idiosyncrasies. It makes use, not of the complex formulæ of the official pharmacopœia, but of the simple principles which modern chemistry has placed at our disposal, notably, of the alkaloids and of those metallic salts and metalloids whose pharmacodynamic action can be put in evidence by direct experiment." The Dosimetric medicaments are given in the form of granules, of which some contain only half a milligramme ($\frac{1}{130}$th grain, Eng.) of active substance; others contain one milligramme ($\frac{1}{65}$th grain); and others again contain as much as one centigramme ($\frac{1}{6}$th grain) of the active substance in each granule. These granules are administered as required according to the urgency of the case. For example, in an acute disease, it may be necessary to give either one or several kinds of granules (together or separately), according to the symptoms, every quarter, or every half-hour, which must be continued till the disease yields. Thus most fevers and inflammations can be jugulated by administering every half-hour, day and night, one granule each of aconitine, arseniate of strychnine, and digitaline. In a chronic disease, fewer granules may be required, perhaps only administered three or four times a-day. Hence the rule: an acute disease requires an acute treatment; and a *chronic* disease a chronic treatment; or, in other words, the more rapid a disease is in running through its dynamic or functional stage, the more rapid must be the treatment, and the slower the disease is in its course, the slower must be the treatment.

The great object in all treatment is that the medicaments should act by physiological catalysis, that is, they should excite certain movements of nutrition, etc., without themselves participating in those movements, either chemically or physically. Hence, may be seen the danger of giving too large doses of any medicament, for, if such is done, the economy is disordered, irritated, and depressed. Every medicinal agent, when administered according to the Dosimetric method, has an elective action, that is, each goes naturally to its proper address, but not otherwise.

The patient is now no longer nauseated with bulky doses, nor, on the other hand, played with by Hahnemann's mythic decillionths; neither is he half-poisoned by compositions, the potencies of which are unknown. He now takes powerful remedies in a pleasant form, accurate in composition, reliable in action, and which are measured to the urgency of the case, and to the nature and violence of the symptoms.

The Dosimetric method takes everything, however trifling, into consideration, such as the medical constitution; the individual constitution; the hereditary condition; the age and sex; and the mode of life; the treatment being modified according to the varying conditions of each case. Dosimetry, therefore, never follows rigid and unchanging routine. It recognises the fact that a medication which is suitable for one individual is not so for another. Idiosyncrasies are never ignored.

Dosimetry is a bitter enemy of the expectant school. In acute diseases it never *waits* for the symptoms to be developed in order to establish the diagnosis, but it acts on the principle that every acute affection should be jugulated at once, before the anatomo-pathologic lesions appear, which are certain to *arise* and complicate the case if the fatal mistake is made of *waiting for the* diagnosis. Expectancy has shipwrecked thousands of lives. No physician who values his reputation, or the welfare of his patients, should suffer himself to be a disciple of this erroneous doctrine.

It will thus be seen that Dosimetry as a system of therapeutics is superior to all other systems. Being founded on the *vitalism* of Hippocrates, it is sure to become established, and to flourish where other systems have failed. No practitioner who has once adopted it will cease to employ it. No patient who has once been treated according to the Dosimetric method will care for any other medication. Dosimetry places medicine in the great conclave of the positive sciences, and gives to therapeutics a "rigidly determined object and method." It dethrones all guess-work in medicine, and establishes mathematical precision in every case. Rejecting the errors of other methods, it nevertheless accepts the truths contained in them, and employs them to relieve suffering humanity. Though a sworn enemy to all that is false in medicine, it is a friend to progress, and its aim is to establish medicine on a firm foundation. Yielding to none where genuine medical truth is concerned, Dosimetry nevertheless holds out the hand of friendship to practitioners of every school, and invites them to examine its claims.

Dosimetry looks upon the two rival systems of medicine—Allopathy and Homœopathy—as being both equally at variance with truth. Allopathy weakens the patient's system by bleedings, purgings, sweatings, and fastings. Its massive doses also thoroughly nauseate and disorder him. Homœopathy, as taught by its founder, Hahnemann, is merely another kind of expectation, for its remedies consist of infinitesimal dilutions, which have no materiality. In other words, homœopathy must be looked upon as a kind of *medical metaphysics*, the very forces which its remedies pretend to develop being like its medicaments, only imaginary.

The reform in therapeutics, inaugurated by the brilliant Belgian Professor, marks a new era in medical history. When Dosimetry comes to be the universal practice of every enlightened physician, and when the public are fully alive to the fact that every disease should be attacked at its outset, then will gradually begin to disappear all those organic diseases which now desolate our race. The study of pathological anatomy, which at present occupies so much of the valuable time of our medical students, will be superseded by the study of therapeutics, which will be the chief subject taught in all medical schools. Experience has often demonstrated that a profound knowledge of pathology on the part of a physician avails a sufferer but little. No one will therefore deplore the neglect of pathological science, when such great and happy results can be obtained from a fuller and more lengthened study of therapeutics. When the advantages of Dosimetry are more widely known, every practitioner will aim at being a skilful therapeutist.

The young King of Spain, His Majesty Alphonse XII., has added to the glories of his reign by his enlightened and noble patronage of the great International Congress of Dosimetric Medicine, held in the spring of 1881, in the capital of his kingdom. He showed a high appreciation of the advantages likely to result from the method introduced by the illustrious Professor Burggraeve. His Excellency the Minister of Public Instruction, in opening the Congress, stated that the Spanish Government was always ready to welcome new truths. He paid a well-deserved compliment to the worthy Professor of Ghent, and characterised the Dosimetric method as "the perfection of medicine." Such perfection English practitioners will find it; and though as a rule they are slow to adopt new medical truths, yet their experience will ultimately convince them that Señor Albareda's estimation of the Dosimetric method is correct. So popular will the new method become among British practitioners after they have once put it to the test, that I venture to predict the speedy realization of the suggestion made by Dr. J. W. Davies, of Ebbw Vale, that a *chair* of Dosimetric medicine be established in every medical *school. When this* is done, then Dosimetry will be triumphant.

One of the most pressing necessities of the present age is the teaching of genuine therapeutics to all medical students.

Let me caution those physicians who adopt the Dosimetric method, and who desire to obtain uniform results in the treatment of cases, to be on their guard against all coarse and cheap imitations of the Chanteaud granules. No granules are genuine or reliable but those which are manufactured by M. Charles Chanteaud, the eminent Parisian pharmacist. To these only has Dr. Burggraeve attached his signature as proof of their reliability. The Chanteaud granules when taken into the system become assimilated in a very short time, and are quickly dissolved in the gastric juice. Unless such be the case, no alkaloids could be safely administered. Many of the imitations of Chanteaud's granules are apt to accumulate in the economy: a condition of things which might easily lead to dangerous or even fatal results. Take for example the aconitine granules manufactured by M. Chanteaud. No accident has ever happened with these granules, although they are used daily in every part of the world. The same cannot be said of the various imitations, some of which have given rise to dangerous symptoms. The Spanish Government, recognising the skill and care evinced by M. Ch. Chanteaud, in the manufacture of the Dosimetric medicaments, and as a mark of the high estimation in which he is held as a scientist, has conferred upon him the title of *Commander of the Order of Isabel la Catolica.*

Medical practitioners must warn their patients and the public generally that the Dosimetric medicaments cannot be safely employed without skilled medical advice. The powerful alkaloidal granules (with some few exceptions) should not be used for purposes of *self-cure.* No person can treat himself or his friends in cases of genuine illness. It is not wise to attempt it, especially with the more powerful granules.

Chemists need not fear that the new pharmacy will work them harm, rather will it elevate them into scientists, making them not mere vendors of hurtful quack medicines, but skilled preparers of drugs, giving them a new position equal to th of their medical confrères.

I feel sure that practitioners of every school will welco this, one of the most important of Burggraeve's practi works in its English dress. The translation has, to me, be a real labour of love. I have been actuated by a desire make known among English-speaking practitioners, some the great results obtained by Dr. Burggraeve, in the Ci Hospital of Ghent, and confirmed by numerous Continent and American physicians. I predict for Dosimetry the greate success in this country.

In editing this work, I have added a section on Typho Fever, and one on the Chanteaud Seidlitz. I have also part re-written the article on Typhus. Several other minor alter tions and additions have been made, which will add to t value of the work, and make it more useful to the physicia I have throughout retained the Centigrade scale, which preferable to the Fahrenheit. Centigrade may be easily co verted into Fahrenheit, by multiplying by 9, then dividi the product by 5, and lastly by adding 32 to the quotient.

To Mr. Benjamin Snowden, of Leeds; Dr. Phipson, London; and M. Rebaute, of Paris, I am indebted for ma useful suggestions and sound advice. Their assistance h been of very great value to me. I beg here to acknowled their services, and to thank them.

I must crave the kind indulgence of the reader for a errors which may appear in this work, for such are certain be present in a translation.

HENRY ARTHUR ALLBUT

24, Park Square, Leeds,
April 6, 1882.

AUTHOR'S PREFACE.

THE *Handbook of Dosimetric Medicine* published in 1873, having been rapidly exhausted, I would have issued a new edition of it; but Boileau says:

> Vingt fois sur le métier, remettez votre ouvrage.

I have therefore preferred to revise my work entirely.

Besides, the views of dosimetry were not so clear at that time as they now are; they were still obscured by the vague theories of polypharmacy. Dosimetry now knows what it can do, and whither it tends.

What it can do, is, the jugulation of acute diseases at the commencement, thereby extricating the healing art from those quagmires which engulf all sense of security, and all confidence in the practitioner.

Is it astonishing that in presence of the almost absolute impotence of allopathy (we find a proof of it in the withdrawal of a large number of physicians in acute cases), charlatanism raises its head and invades the domain of medicine, like the marauders of the battle field?

In consequence of the numerous textural alterations—which could not be prevented for want of an efficient system of therapeutics—the progress of medicine has become almost impossible, so cumbersome is the anatomo-pathologic baggage which the organic school increases daily—like as those kings of India who went forth to war with a luxuriance of chariots, and who were defeated by an enemy less numerous, but less embarrassed than they were.

Hippocrates was unacquainted with these pseudo-scientific paraphernalia ; he was a vitalist. This constitutes his claim to be considered at the present day "the father of medicine," though the latter dates from the birth of humanity.

As soon as man began to observe nature, he found the remedy at the side of the disease. Thus he employed at first the SIMPLES, not doubting that they contained extractive principles (as the gangue enfolds the precious metals).

Before the discovery of cinchona, physicians cured intermittent fevers by plants growing in the marshes,—the cinchona tree itself is an inhabitant of the marshy regions of South America.

Now, quinine is employed, and the course of such fevers is shortened by it; no physician would, therefore, abstain from administering it.

The same therapeutic law should hold good as regards continued fevers, which are abandoned to the so-called healing power of nature *(vis medicatrix naturæ)*, as if nature in these fevers—any more than in intermittent fevers—could dispense with aid.

It is because I am a surgeon that the idea of jugulating these fevers occurred to me. I saw the miscarriage of so many operations performed under the best conditions, and with every requisite care, in consequence of the supervention of *traumatic* * fever, that I desired to prevent or cut short this latter, and by a similar class of remedies like quinine, that is to say, by the *excito-motors*, or alkaloids.

Thus, at the commencement of inflammations, phosphoric acid and sulphate of strychnine should be administered in order to prevent paralysis of the vessels.

Indeed, the inflammatory process depends on the stasis of the blood in the irritated tissues, and on its heated condition;

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* This term implies a fatality which does not exist, since many injuries or serious operations are got over without fever, if the surgeon knows to *attack this* latter in time.

whence arise the products of exudation, suppuration, etc., to which are due the heteromorphous changes, or anatomo-pathologic lesions.

Every phlegmasy should, therefore, be prevented by the nervines; this is an important rule, which governs all the therapeutics of acute affections.

I have also constituted it the basis of my dosimetric system.

But if fever is once set up, it must be allayed by the defervescent alkaloids: aconitine, veratrine and digitaline. It is, therefore, necessary accurately to determine the doses.

That there should be some vagueness on this point may be understood. The writers on *Materia Medica* had fixed *maximum* doses, that is to say, such as could not be increased without danger of poisoning. I desired to be perfectly clear in this respect, and I began to experiment on myself. I therefore took aconitine in doses of half-a-milligramme at a time, and at fixed intervals (a quarter-of-an-hour); and having previously taken note of the temperature and pulse, I was enabled to determine what dose of the remedy was necessary in order to arrive at that degree of saturation of the organism at which the pulse and temperature are depressed below the physiological mean.

I drew from these trials, this conclusion: that if in the apyretic condition it is necessary to administer as much as four milligrammes of aconitine to bring about the above result, then, in pyrexia it would be needful to increase this dose as many times as the pulse and the temperature are themselves elevated above the physiological standard; consequently, if to cause a reduction of the animal caloric two degrees, two milligrammes of aconitine are then required; to reduce it 4°c., sixteen milligrammes are necessary, and sometimes more, for the individual idiosyncrasies or impressionabilities must be taken into account.

Clinical results have confirmed these calculations, for patients whom I had operated upon, when they were attacked by traumatic fever, having a temperature of 40°—41°c., and a pulse of 120, after taking ten, or sometimes twenty granules of aconitine, of half-a-milligramme each, given one by one, at quarter or half-hour intervals, obtained a sedation of their fever, *whatever had been the gravity of the accident.*

The first law of dosimetry was then discovered: That the more rapidly the disease runs through its dynamic or vital period, so much the more is it absolutely necessary to reach the therapeutic or curative stage as rapidly as possible; in other words, to acute diseases we must oppose an acute treatment, and to chronic diseases a chronic treatment.

The second law is that of the *dominant* and *variable* treatment; the first (the dominant) addresses itself to the cause of the disease, the second (the variable) to the symptoms.

The reason of this distinction may be conceived: for the morbid cause being once diagnosed, the treatment remains the same, the cause not varying. Thus, constitutional syphilis demands the iodides, and rheumatic gout the alkalies, on account of the acescent condition of the humours; but the effects of these diseases vary according to individual temperaments, and as certain systems or organs are attacked. Thus, sometimes pain must be combated; at other times, spasm; now, exudations or hypersecretions. The proverb: *Sublata causa tollitur effectus,* always remains true; but, in the meantime the patient is suffering, and we must relieve him; or, perhaps, the tissues will become disorganized; that is why it is necessary to vary the remedies according to the nature of the diseases.

Dosimetric medicine has been reproached with being purely symptomatic; but this accusation is far from being well founded, since on the one hand it attacks the cause of the malady, and on the other hand is a rational and methodical
atology, taking account of anatomy, physiology, and

be permitted to quote here the following remarks written by Dr. Spring, in the preface to his *Symptomatologie* or *Traité des Accidents morbides*,—a work which physicians cannot sufficiently study.

"A kind of disfavour has hung for a long time over symptomatology. If it does not vindicate itself, it is at least explained by the tendency which is characteristic of the medicine of our time. Indeed, by dint of concentrating the attention on anatomical lesions, we habituate ourselves by degrees to regard functional troubles as insignificant reflections, variable and uncertain. Then, as this was precisely contrary to the medicine called *symptomatic* (which we had to combat) it was natural that the study of symptoms was dragged with it into a common reprobation.

"Nevertheless, however sincere may be the admiration which is professed for the progress realized through the aid of anatomical, microscopical, and chemical researches; however convinced one may be of the insufficiency of a diagnosis and a therapeutics purely symptomatic, it is none the less true that these functional troubles remain as the principal subject and preoccupation of both physician and patient.

"Alas! It is so rare to heal,* whilst it is always urgent to relieve. Are all the affections of the nerves understood: pain, spasm and paralysis, even in strictly scientific medicine, other than as purely functional accidents?

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* This avowal on the part of a physician so learned as Spring must be recorded; that is—must be truly said—he was not a therapeutist, any more than allopaths in general. He was also one of the victims of this nihilism, for when he was attacked by an acute fever, his physicians were unacquainted with the means of cutting it short. I have repeatedly endeavoured to persuade him to adopt my system, but he always opposed me with the *Non possumus!* that is to say, "We cannot retrace our steps," which is equivalent to saying: "Perish humanity rather than principle." In our hospital service, dosimetric medicine is seen at work every day, and the *Répertoire*, in one of its last numbers (June, 1876), has given statistics showing the deaths as 0; and yet this statement refers to the gravest cases. Hospital physicians cannot too soon follow this method, where there is economy of time and money, without reckoning the chances of cure. Doubtless, hospital boards have no business to interfere with the different treatments of the physicians, but the latter, also, should not be considered as omnipotent to the point of infallibility.

"And in chronic diseases—for the most part incurable—what remains to be done, even by the most expert physician, but to search out and attend to the symptomatic indications?

"I do not speak of the obstacles, which, in every day practice, oppose themselves so often to the complete methodical exploration of the organs, and consequently, to the establishment of a certain diagnosis of the lesion.

"Lastly, have I need to demonstrate how much the previous rational diagnosis—relying exclusively on the symptoms—facilitates in all cases the material and physical diagnosis?"

I will go much further than the Professor, whom the University of Liége has lost, and with him one of its most brilliant lights.* This *material* or physical diagnosis avails nothing when the organic lesion is established, except to prove *that nothing more can be done.*

I except surgical cases, where a *physical and material treatment* is in question (since it is always that phrase which is hurled at the physician—who has in the meantime mainly to reckon *with the forces*); but then, also, it is a question of reckoning with the symptoms, in other words, with the vitality.

I will explain.

It is not to cure symptoms that allopaths and homœopaths always oppose remedies, either *contrary* or *alike.* In this matter both schools err together.†

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* It is one of the merits of Belgium not to be exclusive. Nationality is a praiseworthy sentiment, but only when it is not mean. Belgium—this justice must be rendered to her—welcomes every genius, no matter whence he comes. Formerly, she sent her *savans* abroad; Vesalius, Dodonnée, and Van Helmont were not mediocre geniuses. What the stranger returns her to-day is but the payment of a debt contracted by him in former times.

† It is a misfortune for medicine to be created on systems. What would be said of him who would reform the laws of the planetary system? *The genius of* man is very small when he would supersede nature.

In dosimetric medicine we do not merely follow the symptoms, but we interpret them, thus satisfying nature's desire. A symptom is always something inordinate, and anti-physiological, which it is our object to allay as soon as possible, so as to re-establish the normal condition. A person is suffering from a violent intestinal colic—a *miserere ;* is it always by the opiates that it can be relieved? On the contrary, it will be increased, if (as often happens) there is paralysis. Rather, then, should recourse be had to strychnine. But, the question might be asked, What should here be the guide? Clinical experiment. This is why Professor Spring says again :

"The physiological method has been powerful in overthrowing secular errors; it has laid bare a crowd of pathological doctrines; but on the other hand—it must be owned—*it has hitherto edified but little.*

"Physiology—like chemistry and physics—when it transports itself into the domain of medicine, is irresistible with regard to simple facts; but in clinics, the question is one almost exclusively of complex facts. The *rôle* of the pure sciences is reduced too often to the laying down of problems, and making promises for the future.

"How many men of talent have we not seen succumb without profit, in the search for that which might be styled the medicine of the future?

"Besides, is it not true that the physiologists resemble the systematists, whom modern medicine has taught us to mistrust?

"Whether we speak of a physiological formula, or of any general doctrine, in both cases we risk perverting facts, enchaining observation, and forcing conclusions.

"The true medicine of to-day is still that of Hippocrates, Sydenham, and Stoll: the medicine which maintains itself on the wide territory of observation, and obeys neither systems nor theories.

"To render observation more complete and more faithful, it accepts with gratitude the co-operation which the physical and natural sciences can lend it; for purposes of generalization, it accepts their decrees; in its progress it seeks constantly to draw nearer to them, but it never loses sight of the fact that its attainments are but collective and rude truths." (Work quoted.)

I could not better convey an idea of the progress of dosimetric medicine, which "maintains itself on the wide territory of clinical observation, and obeys neither systems nor theories."

Thus, it is clinical observation which teaches the recognition of asthenia in the sthenic; instead of allowing the vital forces to be exhausted by inaction, or by a debilitating medication, it says, on the contrary, that they must be fortified by the excito-motors. It will be the glory of the dosimetric method to have placed strychnine (arseniate, sulphate) at the head of the antiphlogistic remedies; to have taught the use of the defervescent alkaloids (aconitine, veratrine, etc.) in small doses, repeated one after another, until the therapeutic or curative effect has been reached; and to have made use of simple agents as touchstones for the recognition of the true character of diseases.*

Such are the principles which will be found in this New Handbook, which will suffice for the practitioner of medicine until that time when I trust to be able to publish a more exhaustive work, if thus far I preserve my health and strength.

As to the plan which I have followed, here it is:

(A) I have occupied myself in the first place with sthenic diseases, in which I have demonstrated that asthenia *always* exists, even as it does in the normal physiological condition itself: thus, when the stomach suffers from hunger, it becomes

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* Medicine has been reproached for its gropings. Well! it thus proves its prudence and wisdom. If the disease is most often a hidden enemy, is that to say that it may fail to be driven out by a *tour de bras*, like the blind man of whom Barthes speaks, who strikes about him with a stick, only too happy if it is his enemy alone that he strikes?

irritated, injected, and finally inflamed, if its cravings are not satisfied by food. Can we say in this case, that there is a sthenic rather than an asthenic condition? It is the same with fevers in general, all of which require the employment of the excito-motors at the outset. When this principle shall be well understood, medicine will flourish again, like a field freed from noxious weeds.

Congestions no more escape this general law, than do inflammations. It is also from this point of view that I have studied these three classes of diseases.

(B) I have, then, occupied myself with diatheses or faults of nutrition, by referring them to alterations of vitality, and not to an unreal iatro-chemistry.

(C) I have particularly insisted on the value of thermometry. The thermometer is, in truth, the manometer of the physician, since by it he can recognise the degree of intravascular pressure. It indicates to him when he should administer the excito-motors in order to cut short fever, and thus prevent organic lesions, which too often prove fatal. I have also reproduced the laws formulated by Wunderlich, whose thermometric works have pointed out to the physician a sure way of recognising the sthenic or asthenic character of diseases. There is, then, no occasion any more to say:

> "Devines si tu peux et choisis si tu l'oses,"

which was the cause of so much perplexity to the practitioner, and which has originated so many discussions—unhappily over the tombs of patients. Now, however, the physician has a certain guide in thermometry.

(D) Lastly, I have devoted a long chapter to uroscopy, which, at the present day, constitutes a certain element in diagnosis. The ancients had some idea concerning it, but their science failed them in ascertaining the nature of deposits.

They were obliged to rely on the physical characteristics alone, that is to say, on turbidity or limpidity. At the present time, the physician can recognise the condition of the blood from the urine, and, consequently, the diseases which may result from it. Thus, it was necessary to direct the attention of practitioners to the various alterations in the normal condition of the urine.

Formerly, there was *uromancy*, even as there was *chiromancy:* the former pretending to read the urines as the latter the lines of the hand. The money, however, which this species of charlatanism procured, was the most evident result. This cannot be said of uroscopy, which is a *bona fide* science, based both on chemistry and physiology.

Such is the plan of the New Handbook, which I offer to the adepts in my method, thanking them for having so willingly entered upon this course without reservation, and especially without false shame, for that which still keeps back many physicians is the fear of disowning their past views. I would say to them, there is no shame in following progress.

DR. BURGGRAEVE.

GHENT,
July, 1876.

À Monsieur le Docteur ARTHUR ALLBUTT, à Leeds (Angleterre).

Mon Cher Docteur :

Vous voulez bien me demander une préface pour votre traduction du *Manuel de thérapeutique dosimétrique* en anglais. C'est pour moi un devoir de reconnaissance, car, avec le docteur Phipson, de Londres, vous avez été les premiers promoteurs de la dosimétrie en Angleterre. Je laisse là le côté périlleux de cette situation, car les esprits généreux font le bien pour le bien, sans s'inquiéter si cela leur sera favorable ou défavorable. Quoique l'Angleterre soit essentiellement un pays de progrès, elle tient aux Institutions auxquelles elle doit sa grandeur. C'est ainsi qu'elle garde ses vieilles Écoles médicales qui ont jeté tant de splendeur autour d'elles. Petit à petit, cependant, elle y apporte des modifications qui, pour ne point être radicales corrigent ce qu'elles ont de suranné. En politique, comme en sciences, on peut donc dire que les Anglais sont progressistes tout en étant conservateurs. Ils savent se garder des doctrines extrêmes et ont pour devise : " Le mieux est l'ennemi du bien." Il était impossible que la dosimétrie obtînt, de prime abord, droit de bourgeoisie en Angleterre. Le difficile était de l'y faire connaître, et à cet égard, j'ai été heureux de trouver en vous et en votre estimable ami le docteur Phipson, des interprètes autorisés : vous par votre longue pratique médicale, votre collaborateur par ses travaux scientifiques justement appréciés dans le monde savant. Ce que le journal du docteur Phipson a si bien commencé, votre traduction du *Manuel de thérapeutique dosimétrique* va l'achever, comme œuvre de vulgarisation.

Plus tard, vous publierez un grand ouvrage *didactique et pratique*, mais, comme on dit: " Il faut commencer par semer si l'on veut moissonner."

Déjà beaucoup de praticiens anglais ont adopté la méthode dosimétrique, parce qu'elle est, à la fois, rapide, sûre et commode : *Citò, tutò, jucundè*, trois conditions essentielles de l'art de guérir, puisqu'il importe avant tout de ne pas nuire aux malades—*primo non nocere*—et de les soulager au lieu d'augmenter leurs malaises ainsi que le fait trop souvent l'allopathie. C'est ce que les homœopathes ont compris et ce qui a fait leur vogue dans le public, ainsi que le dit West dans ses *Leçons sur les maladies des enfants*—et certes nous ne pourrions citer autorité plus grande en Angleterre. Il importe donc de rappeler ce qu'il dit dans l' *Art de prescrire pour les enfants:* " Nous devons cependant donner quelques aperçus généraux sur l'art de prescrire pour les enfants à la mamelle et ceux du premier âge. Mais d'abord je dois vous prévenir de la double difficulté que vous créeront, d'une part la méchanceté du petit malade,* de l'autre les préjugés des parents† ; presque tout votre succès comme praticien dépendra de la délicatesse de tact avec laquelle vous éviterez d'entrer en lutte avec les deux. Prescrire une médecine *nauséabonde*, quand avec un peu de soin vous auriez pu en ordonner une d'un goût agréable, insister sur un remède particulier qui dans l'idée des parents ne convient pas (à moins que vous ne le jugiez indispensable à la guérison du malade), c'est affaiblir sans motif l'autorité que, pour des maladies plus graves, il est, absolument nécessaire que vous puissiez exercer. Comme l'ont très-bien dit MM. Rilliet et Barthez, la méchanceté, la mauvaise humeur et le refus de tout médicament de la part des enfants se constatent plus dans les affections légères que dans les maladies sérieuses. Dans la plupart de ces cas la nature seule suffit à amener la guérison, et si, en même temps que vous surveillez tout symptôme grave, vous pouvez éviter aux enfants ces *boissons désagréables qu'ils n'avalent le plus souvent qu'après un supplice de pleurs, de frayeur et de colère, vous aurez beaucoup gagné dans leur affection et n'aurez rien perdu de la confiance des parents. La lutte avec un enfant pour le contraindre à prendre une médecine, lui administrer un vomitif, fait généralement plus de mal que le remède ainsi administré ne peut produire de bien, et le déluge de larmes qu'elle évite dans les nursery, est une des plus puissantes recommandations de l'homœopathie au choix du public.*"

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* " Cet animal est bien méchant,
Quand on l'attaque il se défend."—La Fontaine.

† Les parents n'ont d'autre préjugé que celui de voir guérir leurs enfants.

Comme on le voit, l'illustre médecin d'enfants condamne ici l'allopathie avec ses remèdes grossiers, et sans approuver l'homœopathie explique sa vogue auprès du public. On peut en dire autant de la dosimétrie, qui adopte l'administration des principes médicamenteux simples, sous forme de *granules*, comme les homœopathes celle de *globules*.

Mais de là est venu un malentendu qui s'est opposé tout d'abord au succès de la dosimétrie : d'être une sorte d'homœopathie déguisée. Ceux qui ont soutenu cette opinion étaient et sont encore convaincus du contraire, car il est facile de s'assurer en mâchant un granule de strychnine et un globule de *nux vomica*, que le premier est d'une amertume formidable et le second tout à fait inerte. Il en est de même pour tous les médicaments à caractères subjectifs nettement prononcés : par exemple la quassine, l'iodoforme, l'aconitine, l'atropine, l'hyosciamine. De sorte que le médecin sait ce qu'il donne, et le malade ce qu'il prend. On ne saurait en dire autant des médicaments composés ou ce que West nomme des *médecines nauséabondes*.

Mais ce serait peu si les médicaments dosimétriques n'étaient qu'agréables *(jucundè)*; ils sont surtout sans danger (*tutò*) et d'un effet rapide (*citò*). Ce sont là les trois conditions indispensables à tout traitement. Et puisque nous venons de citer West, nous parlerons d'une maladie d'enfants contre laquelle la médecine a semblé jusqu'ici être impuissante: la coqueluche. Eh bien! c'est ici que la dosimétrie triomphe avec ses granules d'hydro-ferro-cyanate de quinine, de sulfure de calcium, d'aconitine, de vératrine, d'hyosciamine, pour combattre les quintes de toux et empêcher la fièvre.

Nous pouvons également citer l'angine couenneuse, le croup, qui font tant de victimes dans le jeune âge. La jugulation des maladies aiguës est le fait capital de la dosimétrie, et qui établit sa supériorité sur toutes les autres méthodes de l'art de guérir. Ainsi les malades ne sont plus abandonnés aux dangers de la médecine expectante. Dès que la maladie apparaît on la combat avant qu'elle se soit localisée, comme un ennemi venant envahir un pays, qu'on ne laisse point s'y établir. Là *seulement* est la puissance de la médecine. En dehors de cette jugulation, elle n'est plus qu'une "inutile histoire naturelle."

A quoi sert, en effet, ce luxe d'*anatomie pathologique* dont l'École a rempli son enseignement? A donner le change sur son impuissance. Elle se livre à de savantes déductions, mais ses *autopsies* prouvent qu'elle n'a rien fait pour les prévenir. Une fièvre typhoïde est pour elle un cercle fatal dans lequel le malade est renfermé, à moins qu'il n'ait la force de le briser. C'est un supplice que le Dante a oublié dans son Enfer. Comprend-t-on, en effet, rien de plus affreux que de rester pendant des septenaires que paraissent des siècles, cloué à son lit de douleur? que ces convalescences interminables qui vous privent de vos facultés les plus nobles: l'intelligence? que ces altérations du sang et des humeurs qui vicient les constitutions les plus robustes? Attendre; ne rien faire; voilà ce qu'on croyait être de la médecine. Mais à ce compte il ne faudrait pas être médecin: un infirmier suffirait. Et en effet, combien de fois ce dernier n'est-il pas plus utile que le médecin *traitant.*

Voilà en quoi la dosimétrie modifie profondément la *médecine et* en constitue un art nouveau. En vain l'École prétend le contraire, elle se condamne par son impuissance. Il faut qu'elle disparaisse ou se modifie. Elle n'a pas d'autre expectative.

Au reste, nous ne ferons pas à l'École anglaise le reproche d'immobilité qu'on peut faire aux Écoles du continent, notamment en France. En Angleterre règne l'Enseignement libre à côté de l'Enseignement official. C'est là ce qui fait l'indépendance du médecin, qui n'est pas obligé ainsi de *Jurare in verba magistri.* Ailleurs, c'est le *Magister dixit* qui domine. Malheur au médecin qui voudrait s'en écarter.

La dosimétrie est donc une levée de boucliers contre un enseignement suranné. Aussi avec quel empressement a-t-elle été adoptée par tout médecin jaloux de sa propre dignité ! Avec quelle joie ils ont secoué la poussière du classicisme ! Combien maintenant ils se sentent fiers et heureux d'agir par leur propre initiative ! Ils repoussent les entités morbides et n'y voient que des écarts fonctionnels qu'il faut ramener à l'état physiologique. La forme organique des maladies leur importe peu, sinon, encore, pour soulager le malade et prolonger son existence, car on peut vivre longtemps avec un mal organique, qu'on n'irrite point, comme en politique un vice constitutionnel qu'on a soin d' atténuer par de sages mesures. C'est l'histoire de votre Irlande. Mais ici il faut s'arrêter.

Nous clôturerons également ici notre préface, persuadé d'en avoir assez dit pour faire comprendre aux médecins anglais et au public en général l'importance due livre que vous allez leur présenter et auquel je souhaite un prompt écoulement, afin de faire paraître une édition nouvelle, revue, corrigée et considérablement augmentée.

DR. BURGGRAEVE.

GAND,
Avril, 1882.

THE NEW HANDBOOK
OF
DOSIMETRIC THERAPEUTICS.

ACUTE DISEASES.

In order to state precisely this treatment, I shall distinguish diseases into *vital* and *organic* or *anatomo-pathologic.*

It is in this first or dynamic stage that diseases must be jugulated.

The anatomo-pathologic school doing nothing in this respect, has allowed a crowd of material lesions to establish themselves, which I am convinced will disappear from the nosological classification when we comprehend those words of Dr. Amédée Latour, which I have taken as a motto for my work, and which constitute the most express condemnation of the organic school :

" Genuine medicine has deviated from its natural paths ; it has lost its noble object. that of curing or alleviating. By thus acting it has rejected therapeutics. Yet without therapeutics the physician is nothing more than a useless naturalist, passing his life in discovering, classifying, and describing human diseases. It is therapeutics which elevates and ennobles our art ; it alone gives it an object, and I may add, that by it alone can this art become a science."—*Union Médicale.*

It must be well understood that before the advent of dosimetry, the doctrine of the jugulation of acute diseases was not admitted except in the case of intermittent fevers—in which quinine and its different salts are employed. Dosimetry, however, when it was established, proved that remittent and continued fevers could be jugulated in a similar manner, by a similar class of remedies, that is, by the alkaloids.

Hahnemann, it may be truly said, foresaw this possibility, in his law of similars ; but independently that that law is not a constant one, he went so low in his doses that he fell into mythicism. Such eccentricity excepted — and which his admirers have still more exaggerated—the honour of the reform of therapeutics would have been his. No one, at least, will contest with him his having opened the road for pharmaco-dynamics, since until his time physicians had blindly followed the routine of empiricism. By proving that *aconitum* and *veratrum* reduce fever quite as well as bleeding, Hahnemann has rendered a great service to physicians and patients : to the former, by making them more certain of their cures ; to the latter, by saving them from many after-troubles. He thus prepared the way for dosimetry, by striking the first blow against the crude compounds of the official pharmacopœias.

Dosimetry employs medicaments whose action is at once certain, rapid, and agreeable, after the surgical precept of Celsus : "*Tuto, cito, jucunde.*" The physician, therefore, should know that he can have neither motive nor pretext in refusing to adopt this method. The physician is the minister of nature, *naturæ minister* (and not the master, as some pretend) ; he should, therefore, satisfy all her desires : but it is acting contrary to those desires if the organism is weakened when it is making every effort to repel the morbid agent.

Two innovators of our time—Brown and Broussais—present themselves. Which is right, and which is wrong ? I reply : both. Nevertheless, Brown understood nature better than Broussais, since behind the sthenic condition he caught a glimpse of asthenia. But his active measures were rude: instead of inciting, he excited* ; that is to say, to an irritation, he knew only but to oppose a fresh irritation. If instead of the inflammatory medicaments of allopathy, he had had at his disposal the defervescent alkaloids, suffering humanity might have avoided great disasters.

Thus dosimetry acts, and there lies its power. For this reason it has been adopted from the first by all conscientious physicians, who do not share the views of that school which, preaching *organicism* exclusively, has diverged more and more from *vitalism*—the doctrine of Hippocrates.

What is life ? Bichat defined it as "the resistance to death" ; but this definition has been censured, as an attempt to define the unknown by the unknown. Yet, meanwhile, this is all that can be said. When a place is besieged, and the enemy makes a breach in some part of its fortifications, its defenders do all they can to strengthen that point ; behind the existing ramparts they raise others. Thus nature acts: she fortifies the points attacked by doubling and tripling the vital resistance. Broussais was therefore wrong in seeing everywhere cause for bleeding, even as Brown was equally mistaken in consuming the sources of life in the organism attacked.

Having said this much, I may now approach the subject-proper of my work.

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* This distinction between vital incitation and excitation, although specious in appearance, and having the air of a paradox, is very important from a practical point of view. It is evident that when we excite, that is, irritate, the tissues or the organs, they become weakened. At the same time the sum total of the general vitality is diminished. So Brown and his disciples, in giving diffusible stimulants, were only augmenting adynamia. This is what Broussais has rightly reproached them with. But he was wrong, on his part, in seeing everywhere a sthenic condition. There is irritation, consequently, exaggerated expenditure of vital forces. The equilibrium of these latter must therefore be re-established, and thus the defence is proportioned to the attack. When these ideas shall be thoroughly comprehended, fevers and inflammations (in the sense which the *organic school* attaches to them) will cease.

DOSIMETRIC TREATMENT OF FEVERS.

A due amount of caloric is one of the manifestations of life. If this caloric diminishes, disease is indicated; should it disappear, there is death; and when it increases, it proves vital exhaustion. To continue my former comparison, in the latter case it may be compared to those fortified places which, in defending themselves with energy, exhaust their ammunition.

It is now known that animal caloric depends on the vaso-motor nervous system. All those causes which have a tendency to interfere with or impede the action of the latter, produce fever.

But, among those causes, some are more depressing than others; there are even some which completely annihilate caloricity or the action of the vaso-motor nerves.

MIASMATIC ALGID FEVERS.—PERNICIOUS PALUDAL FEVERS.—ASIATIC CHOLERA.

Pernicious intermittent fever was named *algid fever*, because the cold stage is prolonged during the greater part of the attack.

It is a nervous paralysis, in which reaction cannot take place, or is insufficient.

The fever is said to be *masked* when it assumes the appearance of another disease, according to the organ or system of organs in which it localises itself.

At the commencement of my medical career, in 1826, when I was house-surgeon at the Civil Hospital of Ghent, I had the opportunity of observing an epidemic of pernicious fever, assuming many forms. This fever, of a paludal character, had been caused by the digging of a canal to the sea, through the ancient marshes. Of the sick who were brought to the Civil Hospital, some were unconscious, in a comatose or apoplectic condition, others were delirious, and others spat blood; there were some who presented symptoms of pleurisy, pneumonia, etc., and these symptoms, when once the paroxysm of fever ceased, would disappear. The nature of the affection could only be diagnosed by the pulse and the temperature; indeed, the pulse was much accelerated and very feeble. In the period of reaction the animal heat rose to 41°c. Sulphate of quinine, given in time, prevented a second paroxysm, and saved the patients. All those died with whom this precaution had not been taken. The autopsy showed the organs to be congested with venous blood, but nowhere could be found any inflammatory products, either of exudation or suppuration.

Arseniate of quinine acts wonderfully in algid fevers, along with strychnine, aconitine, and veratrine:—

A granule of each, every half-hour, as soon as the cold stage has passed off, that is to say when there is free absorption.

If these medicaments are given during the period of dry heat, the latter is shortened, and congestions prevented.

The algid state consists in a paralysis of the vaso-motor nerves, that is why strychnine, notably the arseniate, should be employed. The aconitine and veratrine act as defervescents, and the quinine as an antiperiodic. (Vide *Manuel de la Fièvre.*)

ASIATIC CHOLERA.

The algid fever of 1826 was the forerunner of the Asiatic or Indian cholera; indeed, in 1832, the scourge reached us, after having traversed Russia, from east to west, halting successively at Moscow, St. Petersburg, and Warsaw, arriving at the Rhine by way of Breslau and Berlin. I notice this route in order to prove that cholera is a miasmatic affection, the germs of which scatter themselves over a wide area, and follow a determinate course, as has been observed in each epidemic.

The disease sometimes announces itself by certain precursory or premonitory symptoms, characterised by some abdominal derangement; at other times it breaks out suddenly with violent cramps, and a considerable diminution of the peripheral temperature, to such an extent that the patient is chilled externally, whilst he burns inwardly.

To make a brief digression. I believe I shall interest my readers in here placing before them the account of a case of cholera as narrated by the naturalist, Victor Jacquemont. They will see how the medication employed to combat this terrible disease was of an inflammatory nature :—

"Poona, July, 1832.

"Soudine, my Hindu servant, aged twenty-five years, enjoying perfect health, and of regular habits, an abstainer from every kind of spirituous liquor, and almost entirely from animal food, was seized on Friday evening, July 5th, with colic, and very numerous and abundant alvine evacuations of whitish matters, followed at the end of an hour by vomitings. It was only at this moment I was informed of his illness.

"His attitude showed great prostration of strength; he complained of tenesmus, the pulse was very feeble, and the feet a little cold. The evacuations were repeated, upwards and downwards, more than ten times in an hour. Their character was the same : it was a but slightly viscous though thick fluid, of a greyish white colour, without odour.

"The patient was put to bed and warmly covered ; bottles of hot water were applied to his feet, and hot towels placed on his abdomen ; 20 drops of ammonia, in a spoonful of water, were also administered. The patient swallowed this *burning* drug without complaint, but in about two minutes vomited it. Between the hours of seven and eleven in the evening, four other similar doses were administered, in the intervals of cessation of the natural vomiting, but not one was retained more than three minutes in the stomach. In one of these doses I mixed 20 drops of laudanum. He, however, rejected it as soon as swallowed.

"The natural heat withdrew rapidly from the extremities.

The feet were colder than the hands; the legs and also the arms became cold; the pulse could only be detected after the exertion of vomiting; the alvine evacuations became less frequent; the respiration was accelerated, and the body cooled gradually; but the patient complained of an inward heat, which burnt him and caused him to violently throw off his bed-coverings. He pulled off his clothes, and demanded to be left naked.

"These sudden and transient invasions of inward heat were only perceived by a temporary elevation of the heat of the body. At these times a cold and clammy sweat exuded from the forehead only, but the coldness of the legs was not affected by any accidental return of heat.

"The patient suffered from cramps in the thighs and spasms of the abdominal muscles, during the prevalence of the internal heat. The skin of the palms of the hands and of the soles of the feet became hard and rough; the nails were discoloured and blanched, the eyes began to get hollow, and to encircle themselves with smaller, deeper, and blacker interior arches, and with larger arches on a level with the superior borders of the maxillary bones, over the osseous crests of the inferior portions of the orbits; their movements lessened, and their brightness was dimmed.

"At midnight, I gave to the patient eight grains of calomel in a spoonful of sweetened aromatized water; but the vomitings which, without being increased by the remedy, were repeated at intervals of some minutes, expelled at least a great part. At one o'clock on Saturday morning, I gave another similar dose of calomel, with 20 drops of laudanum, but it was rejected in two minutes. He passed the remainder of the night without drinking anything, except a little sweetened water when he suffered from thirst, which only occurred during the sudden invasions of internal heat.

"On Saturday morning the pulse could not be detected, except at intervals, after the convulsive efforts of vomiting.

All yesterday's symptoms were aggravated: the legs were colder, the eyes more sunken, and the physiognomy more changed and cadaverous, the vomitings and purgings having continued the whole night. The patient slept during the intervals of vomiting, and his intellect was dulled.

"At eight A.M., I administered, during an interval of comparative calm, a draught of laudanum and subcarbonate of ammonia, sweetened, and aromatized with essence of mint. The evacuations, *which had already become less frequent before this remedy was given*, continued to be less and less abundant, although their character did not at all vary.

"Towards noon he had some very violent cramps. In these nervous crises the patient continually complained of a fearful heat: it did not affect the extremities, but only warmed for an instant the arms and thighs, and covered his body and brow with a clammy heat, which cooled again immediately. The pulse then reappeared for a moment—weak and irregular. The feeling of general burning, of which the patient complained in the spasmodic paroxysms, continued in the abdomen and stomach for some time after the spasms had ceased.

"During the day I ordered a spoonful of sweetened water to be given to the patient when he desired to drink, which was rarely. The vomitings were not repeated more than five or six times an hour, and the alvine evacuations not more than two or three times in the same period.

"At four P.M., he took another dose of the morning's draught; this was similarly rejected at the end of ten minutes, at the first following effort of vomiting. The breathing became more laborious, and all the other symptoms were aggravated; the strength gradually decreased, the coldness continued, and the sensibility was diminished. During the night the patient had fewer stools, and he was comatose in the intervals of repose. Two doses of calomel of eight grains each, administered in the same manner as on Friday evening, were given at the commencement of the night

(Saturday), and were each retained at least a quarter of an hour.

"On Sunday morning, the patient was almost unconscious and speechless, but he, however, still recognised my voice when I called him by name ; his eyes were dull and fixed, as if they were dead; he, however, told me that he could still see me, but indistinctly.

"At eight o'clock, I made him take a pill containing three grains of calomel and one grain of extract of opium, which he swallowed with great difficulty. His abdomen was rubbed with hot cloths saturated with laudanum, to soothe the violent pains which he there complained of.

"The hot-water bottles which had been placed to his feet from the commencement of his illness, never warmed them, even on the surface, which remained cold though resting on the bottles of boiling water. The vomitings and purgings had entirely ceased; his head fell heavily; his respiration, now more embarrassed, became sighing, and the whole of his body was covered with sweat. After this last effort of nature and some minutes of rattling, he expired without convulsions, at 9.30 a.m."

Victor Jacquemont adds, with an ingenuousness which proves his sincerity: "None of the medicines given to the patient influenced in the least the course of the disease."

The Dosimetric treatment of Asiatic cholera may now be considered.

The thirst and epigastric heat should be allayed by small pieces of ice placed in the mouth, and by a bladder filled with ice laid on the epigastrium.

The reaction having been established, it should be sustained by hydroferrocyanate of quinine :—

A granule every half-hour.

Digitaline must be administered at the same time, in order to re-establish the urinary secretion :—

A granule every half-hour.

This treatment should be continued as long as the circulation and temperature remain abnormal.

If, however, during the period of reaction, the temperature continues obstinate, and rises to 40° or 41°c., the defervescent alkaloids must be given—aconitine or veratrine :—

A granule every hour,

until the reaction has somewhat abated.

The patient must be nourished with soup and salted milk, as soon as the vomitings have ceased.

That a great analogy exists between Asiatic cholera and pernicious intermittent fevers cannot be denied. The late Dr. Everard, who observed two concomitant epidemics of these fevers at St. Petersburg, has given us an account of them which I think should be here republished, because few physicians are acquainted with it. I will let him speak for himself :—

" The absorbent power of the intestine was totally suspended, and that organ, instead of absorbing was secreting only the matter of the evacuations. The urine was suppressed from the commencement. The disease had lasted about 48 hours, without a moment's abatement, until the death of the patient. The prostration of the powers alone appears to have moderated the violence of the evacuations, fifteen or twenty minutes after the invasion of the malady. The patient, depressed by the fatigue and exhaustion consequent upon his efforts, appeared, from the time I first saw him, entirely absorbed and deprived of all power of reflection, except at those times when he was racked by the violent pain of the same efforts. There was no disturbance of the intellectual faculties, and never delirium, but a kind of obtuseness, which continually increased. To an hour before death, the patient manifested no fear, and not even anxiety, concerning his end."

Having assisted at four epidemics of Asiatic cholera, I can vouch for the correctness of the description which I have placed before my readers. I have likewise been able to convince myself that the allopathic treatment employed at that epoch was productive of much harm. During the first period of the epidemic the mortality was 80 per cent. It was only when the epidemic was declining that the mortality fell to 20 per cent., but then little or no treatment was adopted. (Vide my work: *Le Cholēra Indien, etc.*)

Without being able to adduce proofs to support my assertion, I believe that the dosimetric treatment will give more favourable results. This treatment should consist in the washing out of the intestinal tube with Seidlitz salt after each vomiting:—

One teaspoonful in a glass of orange-flower water,

and in the intervals of vomiting, the administration of sulphate of strychnine and hyosciamine:—

A granule of each every quarter-of-an-hour, during the intervals of vomiting.

Dr. Everard continues: "At a little distance from the cholera hospital was situated the one for ordinary diseases. The proportion of patients who suffered from intermittent fevers was tolerably large; thus, being able to pass with facility from a cholera patient to one who was suffering from a severe attack of intermittent fever, I endeavoured to discover the points of contact which exist between the clearly pronounced first appearance of an acute intermittent fever and that of an accession of cholera. In fact, what happens when the attack of intermittent fever has taken place? The skin becomes cold, the pulse fails gradually, and is hardly perceptible, the countenance is altered, the eyes are sunk and encircled, and the voice is feeble and tremulous. If the rigours increase, the respiration becomes anxious, a pale bluish tint appears on the lips and hands, and there is an inclination to vomit, and even vomitings. Suppose now an intense and rapid aggravation of all these symptoms, you will have a faithful representation of the commencement of confirmed cholera. If the attack, some symptoms of which I have just alluded to, has been one of the most severe, although there may be no doubt as to its being an intermittent fever, still some local affection is often seen to arise (especially in the gastro-intestinal mucous membrane), and all the secondary symptoms which depend on it, such as cerebral congestion and a tendency to typhus. I have seen a very large number of cases of the kind; and this was precisely the characteristic mark of the deadly epidemic which ravaged Groningen in 1826. I call especial attention to this point, which has been more particularly observed at the great hospital of Crasno-Sélo, which is, that patients attacked by intermittent fever exhibit a tendency to the typhoid condition, as we have observed among cholera patients. What a remarkable similarity between these two kinds of diseases! Cholera differs from intermittent fever in its great impetuosity and the duration of its cold stage. The principal organs of life are so much tried by it that the reaction is necessarily tardy and difficult, so that a second accession is almost impossible. However, if we observe a cholera patient very closely, we plainly see that distressing efforts and returns of the cramps and vomitings make their appearance with intervals, more or less regular, of calm and relief. This fact is of the highest importance, and all the physicians to whom I have communicated it have not delayed to convince themselves of its truth."

The following was the treatment at St. Petersburg of four patients who were attacked with cholera. This treatment was specially directed against the intermittent principle:

consequently enemata were administered, which were each composed of 1-20 of a grain of alcoholic extract of nux vomica, and two to four grains of sulphate of quinine, with a small quantity of camphor in starch mucilage. The above enemata were repeated every two hours until six or eight had been given. This treatment having proved successful, it was carried out as regards twenty other cholera patients. With the majority a sensible improvement took place, and typhoid symptoms were completely wanting. "The reason is simple," said Dr. Everard; "after an attack of cholera, there is great irritability of the stomach, and to introduce irritant medicines into it may induce prostration, and even gangrene. In the treatment of those grave fevers which prevail in the Caucasus, sulphate of quinine is given in enormous doses, and yet it very often fails in its effect. I think that in those cases, as well as in cholera ones, the stomach is too much injured to derive benefit from this remedy; therefore it would be preferable to introduce it by way of the rectum. I trust that the experiments which will be carried out in those regions will soon confirm the result which I expect."

Such experiments I have made, and they have proved to me that small doses of quinine, repeated at short intervals, succeed better than large doses given at longer intervals.

YELLOW FEVER OR BLACK VOMIT.

This fever is likewise of miasmatic origin. It prevails chiefly in South America, at the mouths of the great rivers. Its invasion is announced by a violent headache, a feeling of universal uneasiness, with lassitude, general prostration, and alternations of shivering and dry heat. The face is red, and the eyes blood-shot; the tongue, especially at the edges and point, is at first red and dry, it afterwards is loaded with a yellowish coating, which, later on, becomes brown; deglutition is difficult; the epigastrium is tight and painful; obstinate vomitings supervene, the vomited matters being at first bilious, and then black; severe colics occur; and the stools are liquid and fetid, in the first instance bilious, but soon becoming black. Symptoms of ataxy ere long appear, and the patient at last dies exhibiting all the phenomena of a putrid decomposition.

These symptoms prove that the disease is produced through a violent poisoning of the system. To bleed would avail nothing, since it is the blood which is decomposed. The utmost that may be attempted in that respect, is to apply leeches or cupping-glasses (as derivatives) over the points most menaced.

As in cholera, the bowels should be immediately acted upon by Seidlitz salt, dissolved in acidulated lemonade, so as thoroughly to wash out the intestinal tube, and arseniate of cafeine, sulphate of strychnine and hyosciamine should be administered to calm the spasms of the stomach, and relieve the cephalalgia:—

A granule of each, together, every half-hour, during the intervals of vomiting.

As soon as the reaction commences to take place, it must be maintained by quinine (arseniate or hydroferrocyanate):—

A granule every half-hour.

If the temperature remains at 40° or 41°c., aconitine and veratrine must be given:—

A granule of each, together, every half-hour.

The above is the treatment which has been put to the test in Brazil, by a physician who was so fortunate as to conceive the idea of introducing into that country the Dosimetric system, and who has published an account in the *Répertoire* of the results obtained by him. The results could not fail to be favourable, since the treatment was directed at the same time against the cause as well as the effects (symptoms) of the disease. (Vide *Manuel de la Fièvre.*)

TYPHUS FEVER.

Typhus is an adynamic and ataxic fever, due to an animal miasm; therefore it is observed to break out wherever there is over-crowding—in hospitals, prisons, camps, and on board ships. Fatigue, deficient and bad nourishment, and demoralization, tend to increase its ravages.

The general stupor; the fixed and dull eyes; the *decubitus de plomb;* the prostration so extreme that the patient is unable to turn in bed; the troubled dreams; the dull and muttering but sometimes violent delirium; the coma-vigil; the dusky flush; the muscular tremblings; the fetid breath and defecations; * the mottlings and mulberry spots; the petechiæ; the typhus odour; the black crust on the tongue; the sordes-covered lips and teeth; and the hæmorrhagic transudations, all indicate decomposition of the blood.

The proper treatment of typhus is suggested by the consideration of all these symptoms: therefore, from the commencement of the attack, the Seidlitz salt must be given to wash out the intestines, and continued until the mouth is cleaned and the stools have ceased to be fetid. This may be effected by the administration of the following beverage, of which the patient may drink a wine-glassful every hour:—

Seidlitz salt, one tablespoonful; infusion of elder flowers, 20 ounces; syrup of lemon, to sweeten.

In the intervals, the patient must take arseniate of strychnine, veratrine and arseniate of cafeine:—

A granule of each, together, every quarter-of-an-hour,

for the purpose of opposing the adynamic and ataxic condition.

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* As a rule, the bowels in typhus fever are costive—still, it is not unusual to meet with many cases where diarrhœa is present—the stools being black.

The reaction having been established, as shown by the recovery of the pulse, it must be sustained by quinine (arseniate and hydroferrocyanate) :—

A granule of each, together, every half-hour.

until the temperature ceases to vary at different hours of the day. It is seldom this temperature then exceeds 39°c.

However, should it rise to 40° or 41°c., veratrine with aconitine must be given again to moderate the caloric and calm the nervous symptoms.

The Seidlitz salt should be administered every morning:—

A tea-spoonful dissolved in a glass of water, so as to cleanse the intestines.

As the principal drink, nothing is better than fresh water, for which the patient is very greedy, but it should only be given in mouthfuls, so as not to introduce too much water into the blood, and to avoid, besides, the production of disorders of the urinary passages.

If the urine should continue scanty and ammoniacal, digitaline must be given:—

A granule every hour, alternately with aconitine and veratrine, if the latter still be required.

The patient will require to be nourished as soon as possible, so as to combat the extreme debility. Therefore, spoonfuls and mouthfuls of good soup and old wine* must be frequently given. Thanks to the above treatment and regimen, the fever will be cut short, instead of being allowed to run over its septenaries, as it does when the expectant method is followed, or commonplace prescriptions are adopted.

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* Wine, in common with other alcoholic stimulants, should be administered with extreme care, and prescribed in measured doses by the physician alone. Unless there are special indications,—such as failure of the heart's action, and falling of the temperature below the normal,—it is better in most cases of fever to trust chiefly to good soups, milk, koumiss, and other easily-assimilated foods. If a wine is indicated, perhaps the St. Raphael is the best. The Spts. ammon. arom. and Ammon. carb. are also reliable stimulants. A rapidly-falling temperature may often be arrested and vitality restored by the administration of strychnine (arseniate or sulphate), phosphoric acid, and benzoate of ammonia :—

A granule of each, together, every quarter-of-an-hour till the temperature becomes normal.—H.A.A.

From the moment it is admitted that typhus is a paroxysmal fever *(fièvre d'accès)*,—and there cannot be any doubt of it in this respect, because between the morning and evening temperatures there is a difference of 1° to 1½°c., and the patient experiences alternations of shivering and heat,—it must be treated as such, the defervescent alkaloids and anti-periodics being employed. Strychnine (arseniate) is necessary from the very commencement of the fever, because the prostration is so great, and it is needful above everything to maintain the vitality.

That typhus can be jugulated, I believe to be a demonstrated fact, for I have often had to treat such affections during my hospital career. It even has happened that I have received patients who had entered on the second septenary, in whom the facial dulness and the muscular tremblings gave me cause to fear that already the meninges were attacked. Thanks, however, to arseniate of strychnine, arseniate of cafeine, veratrine and digitaline, according to the symptoms, it was rarely that the latter did not amend and gradually disappear.

Seeing that at the commencement of this work I pointed out that the physician is the minister of nature, it is therefore necessary that he should render her assistance. It is in moments of urgency that an energetic medication is most indispensable.

TYPHOID OR ENTERIC FEVER.

Typhoid fever is caused by a specific poison, probably of an animal character, but entirely distinct from the typhus miasm. This peculiar poison is generated spontaneously in sewage-matter, and in other animal matters which are in a condition of putrefaction. It is essentially a drain-poison. Typhoid, therefore, is a disgrace to so-called civilisation, and could be completely eradicated by effective sanitation. The typhoid poison may be conveyed in water, milk, and other fluids. Persons over fifteen and under thirty years of age are most liable to attacks of typhoid.

The symptoms chiefly met with in typhoid fever are the following:—Severe frontal headache, general aching pains in the limbs, lassitude, broken sleep, chilliness, nausea, anorexia, diarrhœa, and abdominal pain. The tongue is furred, and there is fever increasing towards the evening. These symptoms, which occur in the early stage of typhoid, are generally so well marked as to cause grave suspicion of an invasion of that disease. Later on, more characteristic symptoms appear, such as the circumscribed flush on the cheeks; the hot and dry, but sometimes moist skin; the accelerated pulse, 100 and upwards, weak and compressible: the enlarged papillæ of the tongue, which is coated with a yellowish fur, and is red at the sides and tip; the dry lips; the great thirst; the pain and tenderness, with gurgling in the right iliac fossa; the tympanitis; the frequent pultaceous stools; the intestinal hæmorrhage; the typhoid rash (lenticular and rose-coloured, coming out in crops, and disappearing on pressure); the delirious but sometimes apathetic condition; the sudamina and liability to bed sores; and the gradual but progressive emaciation and prostration; with collection of sordes on the lips and teeth.

There is a peculiarity of the temperature in typhoid fever, which enables the physician to diagnose it with certainty from all other pyrexial attacks. There is a very regular, but gradual ascent of the temperature for four or five days. The thermometer in the axilla indicates a rise per day of about ½°c. The evening temperature is 1°c. higher than that of the morning, and each morning the temperature falls ½°c. lower than the temperature of the previous evening; thus by the evening of the fifth day, the temperature is 39½°c. to 40°c. After this latter period, the evening temperature usually ranges between 40°c. and 41°c., and the remission in the morning may be but slight. In some severe cases the thermometer may register 42°c.

A consideration of all the symptoms enumerated, will dictate a rational plan of treatment. The intestine must be cleansed and refreshed by the Seidlitz salt:—

One small teaspoonful in a glass of water every morning from the commencement of the attack.

Thus the intestine will be cleared of the fermenting nitrogenous matters, and the serous exhalation produced will diminish the morbid heat in the interior of the body, for in typhoid the rectal temperature is often $1\frac{1}{2}$° to 2°c. higher than the surface temperature.

To prevent tenesmus and diarrhœa, and at the same time to act as a sedative and antiseptic, the following enema (*chloral boraté* of Hébert) may be administered every day, or oftener if there is tenesmus:—

Hydrate of chloral, 10 parts; borax, 5 parts; water, 250 parts.

Two teaspoonfuls of the solution can be added to an ordinary simple starch or gruel enema.

The body must be frequently sponged with cold water or solution of salicylic acid. In cases of high pyrexia, the cold bath may be necessary.

Phosphoric acid and strychnine (arseniate or sulphate) must be employed whenever there is prostration:—

A granule of each, together, every hour or even half-hour, according to the degree of prostration.

As a rule, these remedies are required from the commencement, and may be associated with the defervescent alkaloids, if the temperature is high, and if at the same time there is great prostration. If convulsions or muscular twitchings occur (proof of extreme debility), the phosphoric acid and strychnine are particularly called for.

To reduce the temperature, aconitine and veratrine must be given :—

A granule of each, together, every half-hour.

Their action on the temperature must be closely watched, so as to prevent shivering and collapse. If, however, the temperature remains elevated, some focus of irritation in the intestine (ulceration, etc., of muciparous glands) may be suspected. In such a case, cold baths and sponging must be insisted on.

When the heat and pulse begin to oscillate ; in other words, when the morning and evening temperatures become markedly different, and especially when the symptoms are aggravated, quinine is indicated :—

One or two granules (arseniate or hydroferrocyanate) every half-hour.

If the urine is scanty or suppressed, digitaline and arseniate of iron must be given :—

A granule of each, together, eight or ten times a day.

Insomnia, restlessness, agitation and spasm, may be calmed by morphine and hyosciamine :—

A granule of each, together, every half-hour, until sedation of those symptoms takes place.

It may be requisite to combine these two alkaloids with strychnine, so as to re-establish muscular antagonism.

It is necessary that the patient be well nourished as soon as possible, but great care must be observed in this respect as long as the skin is dry and hot. If, however, the patient sleeps well, and calm has been restored, digestion may be promoted by quassine :—

Two granules three times a day, half-an-hour before food.

Good milk and beef-tea, thickened with arrowroot, and meat-essences (Brand's), form the best articles of diet. Tea and coffee may be allowed occasionally. Alcoholic stimulants are rarely required, and should be given with extreme care, as they often aggravate all the typhoid symptoms.

As reconstituents of the blood after the fever has ceased, the arseniates must be employed;—arseniate of soda or arseniate of iron:—

Six granules a day.

It is not wise to let the patient imbibe too much of insipid drinks, as a condition of hydræmia is induced, and the circulation becomes embarrassed. The salicylic acid lemonade, employed in cases of typhoid in the Civil Hospital at Ghent, will be found a serviceable beverage. It is thus composed:—

Salicylic acid, 4; tartaric acid, 4; simple syrup, 75; tincture of lemon-peel, 5; warm water, 920.

It can be taken like ordinary lemonade.

If the physician be called in at an early period of the disease, the fever can often be jugulated, and the various anatomo-pathologic lesions prevented. The Seidlitz salt every morning, to refresh and cleanse the intestine, and strychnine (arseniate or sulphate), aconitine and digitaline:—

A granule of each, together, every half-hour,

administered till the pyrexia ceases, will often be sufficient to arrest the evolution of the disease.

ORIENTAL PLAGUE.

This Eastern scourge is an affection analogous to typhus, since it is also of animal origin. It is chiefly characterised by the formation of gangrenous bubos in the groins, axillæ, and more rarely in the parotid regions; whilst, on the contrary, in typhus the latter are the seat of parotitis (mumps). In addition to the above, the adynamic and ataxic symptoms are the same.

Desgenettes, who had the opportunity of observing the plague in the Egyptian expedition, has divided it into three varieties:—the first, characterised by a slight fever with bubos; the second, by a more intense fever and bubos; the third by fever with delirium, gangrenous bubos, and carbuncles on the back, the buttocks, and in the abdominal wall.

These varieties or degrees, which mark the evolution of the miasmatic principle, would be mitigated by the dosimetric treatment. Without having had personal experience in this respect, I would advise the same treatment as in typhus:—Seidlitz salt for cleansing the intestine, and arseniate of strychnine and arseniate of quinine to oppose the prostration and exacerbations:—

A granule of each, together, every half-hour.

Soups, generous wines, and acidulated drinks* are required.

The thermometric progress of the disease must be carefully noted; and if the animal temperature remains at 40° or 41°c., it must be reduced by aconitine and veratrine.

It will also be necessary to sponge the whole body with cold water, to which aromatic vinegar or salicylic acid solution has been added.

ERUPTIVE FEVERS.

The eruptive fevers are distinguished by their contagiousness, and some, like variola, are inoculable. It was formerly believed that the development or return of these diseases might be prevented in that way, but experience has demonstrated that their virulence does not the less exist. It therefore became necessary that Jenner should undeniably establish the preservative virtue of vaccine.

The preservative power of vaccine lymph seems to extend to all eruptive and even exudative diseases; thus these diseases have become less frequent and less virulent since vaccination has been generalised.

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* The salicylic acid lemonade, as recommended in typhoid fever, would be most valuable as a drink in plague, on account of its antiseptic properties. Zoedone, also, if it could be procured, might be allowed, *as it* is a valuable blood and nervine restorer.—H.A.A.

Vaccinia is by no means a variola mitigated by its passage from man to the cow, as has been pretended. It is an affection localised on the udder of the cow, and which scarcely produces in that animal any febrile disturbance; whilst the inoculation of variola is very often fatal to it, as Dr. Sunderland has proved by his experiments (I refer the reader for full information on all these questions to my great work, *Monument à Jenner ou Histoire générale de la vaccine).*

All eruptive fevers are characterised by a period of incubation, the duration of which is so much the longer, according as the poisoning has been more intense, and which is recognised by a general prostration, a feeling of lassitude, dull headache, pain in the loins, turbid urine, etc. The physician may at once prognosticate what will be the kind of eruptive fever with which he will have to deal, by the cerebro-abdominal, catarrhal or throat symptoms. Thus, if it be a case of small-pox (variola), the cerebral and abdominal symptoms will be especially predominant. If it is scarlatina, there will be throat symptoms, or difficult deglutition. If, on the contrary, it is an attack of measles, there will be a development of catarrhal symptoms:—coryza, lachrymation, bronchial cough, and difficult respiration, with slightly sibilant râles.

During this period of the disease, the Seidlitz salt must be administered every morning to refresh the intestine, and arseniate of strychnine must be given, so that the system may possess the requisite power to evolve the virus, or cast it to the surface or on to the skin; for it is well understood that those are the most dangerous eruptions which do not come out. In such cases the fever is more intense, and the internal disorders more serious. Then, also, may be seen to supervene, meningitis, angina, and pleuro-pneumonia, without there may be internal eruption. It is not, then, the eruption which has been driven in, but that it has not been formed. It is observed, on the contrary, that the external eruption coincides with an internal eruption, as in small-pox, in which pimples form in the mouth, pharynx, and the digestive and respiratory passages. Hence, another danger, which must also be foreseen.

Therefore, during the period of incubation of the eruptive fevers, the vital force must be incited by arseniate of strychnine :—

A granule every hour till the eruption appears.

If the fever, which is not long in appearing, is very intense, the temperature being 40° and 41°c., and the pulse 120, aconitine or veratrine must be added to the arseniate of strychnine :—

A granule of each, together, every half-hour until defervescence.

A relaxation then takes place. The skin becomes moist, the pulse slackens, the temperature falls to 39° or 38°c., and the eruption comes out without storm, agitation, or delirium, and without any trouble as regards respiration or digestion.

If delirium should supervene, digitaline must be given, like as in cases of nervous delirium :—

A granule every hour, until sedation.

Digitaline will assist in bringing about general relaxation, by causing diaphoresis and diuresis.

When once the eruption is developed, the physician must confine himself to hygienic measures, unless symptoms of absorption or septicæmia should declare themselves.

In that case, regard must be paid to the remissions and paroxysms of fever, which indicate that the vitality is greatly depressed. Arseniate and hydroferrocyanate of quinine must then be given :—

A granule of each, together, every half-hour, as long as the thermometer indicates variations in the animal temperature.

Quinine acts here as an excito-motor, and prevents internal congestions. It would be a grave error, and at the same time an enormous danger, to wait giving the febrifuge until there is apyrexia. It would be a vain waiting, or rather, the patient would be left to perish. It is especially in eruptive fevers that expectation is dangerous, and most often mortal.

In eruptive fevers, it is a common opinion that an artificial incubation is required, by increasing the temperature of the apartment.

This is a very great mistake, since the evolution of the disease is thereby prevented. A moderate temperature is necessary, and defervescence should be accomplished by the alkaloids. At the Civil Hospital of Ghent, the wards are heated uniformly to 16° or 17°c., and this is found to answer well, since there are thus fewer complications. Thus, not only is there less bronchitis or pneumonia, but such are in general mild attacks, thanks to the air constantly renewed by a steam-engine. The ventilation takes place downward; that is to say, the descending or infected strata are rejected outwardly by the upper strata of pure air which the machine forces into the wards. Therefore, it is especially necessary to attend to the purity of the air.

The eruptive fevers or acute exanthemata are too well known for it to be needful to dwell upon them here. Besides, these fevers are not dangerous except by their complications: —smallpox, from entero-gastro-meningo-encephalitis; scarlatina, from angina gangrenosa; and measles, from broncho-pneumonia. The physician should therefore be on his guard against these complications, and combat them on their first appearance, not by debilitants but by vital incitants. Formerly, it was not understood what it was to incite; it was usual to excite, in other words, to exhaust the vitality. Thus, when revulsive agents are employed, no strength is brought to the system; on the contrary, it is weakened. It is therefore necessary, before all, to attack the cause of the disease, and to guard against its effects. This is what dosimetry does, by the *dominant* and *variable* treatment.

SEPTICÆMIA OR PUTRID INFECTION.

Septic fever, when caused by the re-absorption of putrid ichor, is observed after extensive wounds and operations, where the detritus of the tissues gives rise to an extremely penetrating virus, which exercises a deleterious action on the blood and organs. The effects, also, of this decomposition are very rapid.

The fever manifests itself by violent shiverings, alternating with a dry, harsh heat (pulse, 120; temperature, 40°—41°c.), and after two or three paroxysms, the patient can hardly be recognised, so much has he changed. His complexion becomes yellow, jaundiced; a proof that the liver is attacked. However, it is not the bile which has passed into the blood, but it is rather the ichorous matter which has decomposed the latter fluid; and the tissues having lost their cohesion, a general ecchymotic condition is induced. The patient has troubled dreams, and sometimes is delirious. Points of congestion form in succession in the lungs, the joints, the muscles, and the abdominal viscera: the kidneys, spleen, and liver, with surrounding œdema, and the formation of multiple abscesses, which take their rise from species of nuclei. The red and white globules of the blood combine to form their base.

Thus are produced, not what the ancients believed to be purulent metastases, or the conversion of the blood into pus, but genuine local, though insensible inflammations, which are, nevertheless, quite as real as idiopathic abscesses, all the characters of which they present.

These abscesses can be caused artificially by introducing into the vessels of an animal, crushed clots of blood. These small particles, thrown into the circulatory torrent, and rounding themselves there like the pebbles of the sea, simulate the globules and obstruct the capillaries, which they rupture, and fix themselves in the surrounding cellular tissue.

In septicæmia, the vitiated blood-globules act the part of emboli.

But before that, there is an essential alteration due to the introduction of the ichor.

It is this alteration which must be prevented, either by carrying away the ichor as soon as formed, by currents of water, or hindering its formation by antiseptic agents, such as carbolic acid, camphorated spirits of wine, solutions of permanganate of potash, salicylic acid, thymol, terebene, etc.

Among these antiseptic dressings, I would particularly notice those of lead, because there is thereby formed on the surface of the wound, a layer of black sulphuret, which prevents putrid decomposition, or the formation of carbonate of ammonia, which being absorbed, gives rise to the adynamia and ataxy which characterise septicæmia.

Latterly, putrid fermentation has been attributed to the agency of small living corpuscles or organules, to which the names of *vibriones, bacteria, microphytes, infusoria, etc.,* have been given. That these organules exist, there can be no doubt, for they are found in our blood, our humours, and even in our tissues, both as well in the physiological as in the pathological condition; and it is difficult to understand why they should produce fever in the latter state rather than in the former.

It is necessary, therefore, always to attend to the disturbance or alteration of vitality. As evidence of this, when the latter is restored, the fever ceases, even although some organic alteration may already have commenced. Thus, the typhus of the wounded may be combated like miasmatic typhus, and in a similar manner, that is, by the alkaloids.

For that purpose, it is wise to institute a preventive treatment. M. Chassagnac styled the administration of alcoholate of aconite, a few days before a serious operation, as "surgical training" *(entraînement chirurgical).*

For the same reason, we give aconitine to prevent absorptive fever:—

Five or six granules a day.

After the operation, the patient must be sustained by albuminous foods and wine, so as to prevent impoverishment of the blood and intravascular void, which would have the effect of forwarding the re-absorption of ichorous matters.

This, therefore, is quite different from the arbitrary regimen which some surgeons extol.

In order to stimulate digestion, quassine, and even arseniate of strychnine must be given :—

Three to four granules a day, at meal times.

By this treatment, the blood and the tissues are kept up to the desired degree of tone, and reabsorption, or rather infiltration, either intra or extravascular, is prevented.

At the least appearance of shivering or horripilation, hydroferrocyanate or arseniate of quinine should be administered, sometimes the two together, especially when a very intense poisoning is foreseen:—

A granule of each every half-hour.

The nature of septicæmia may now be considered as determined. It is not laudable pus which produces fever, but the ichorous matter or septic virus which vitiates the blood and depresses the vitality. Therefore, the wounded must not be debilitated but strengthened. In a word, their vitality must be sustained. Fixed or diffusible stimulants are totally unable of themselves to produce such a result. Virginian serpentary irritates the digestive mucous membrane, and cinchona tans it, and increases the thirst and dryness of the tongue. Thus, the elimination of the ichorous virus is prevented, for the diarrhœa in that case arises solely from indigestion. The dosimetric granules must, therefore, be had recourse to, for these being very soluble, are easily absorbed, and do not produce any irritation or additional trouble.

The chief point is, the close observation of the animal temperature, or the degree of intravascular pressure, in the same manner as the engineer consults the manometer. As soon as the temperature rises above 40°c., it must be made to fall to 39° or 38°c., by means of aconitine and veratrine :—

A granule of each, together, every half-hour;

and if the heart beats with too great impetuosity (120 pulsations a minute), it must be moderated by digitaline :—

A granule every hour.

For if Cullen,—a celebrated English physician,—called digitalis "the opium of the heart," it must not be forgotten that it stupefies like opium, and that, consequently, it is dangerous to employ it in substance, when the arterial pulsations are weakened, as happens in miasmatic poisoning. In that case, it is advisable to make choice of digitaline, and to associate it with a fixed substance, such as arseniate of iron or strychnine :—

A granule of each, together or separately, every half-hour.

DIPHTHERITIC AFFECTIONS.

The diphtherias are characterised by buff exudations, which were formerly considered as inflammatory products, but which are now known to be parasitic organisms, which attach themselves to the mucous membranes. These diseases are, therefore, looked upon as parasitic affections, like the oidium of the vine.

As these maladies present, generally, an epidemic and contagious character, it must consequently be admitted that the parasitic germs being diffused through the atmosphere, and attaching themselves to the mucous membranes by their pencil-shaped prolongations or suckers, produce there those exudations or buff-like membranes, which thus serve as the receptacles or nests, where they are evolved and multiplied in such a manner as to extend the area of contagion.*

It is necessary, therefore, to destroy the parasitic germs, and to attack the disorders which they have produced.

The first indication will be fulfilled by the administration of sulphide of calcium, the parasiticide *par excellence,* as is proved in the treatment of the vine:—

Eight or ten granules a day,

and undiluted lemon-juice to destroy the false membranes.

As to the general poisoning (these infinitely small particles being usually venomous), it will be neutralised by the emetics, —emetic or emetine,—according as the patients are adults or children :—

A granule every quarter-of-an-hour until the effect is produced ;

and Seidlitz salt to cleanse the intestine:—

A teaspoonful in a glass of water.

The fever must be combated by arseniate of strychnine and quinine (arseniate or hydroferrocyanate) ; the first, for the prostration, the second, against the accession :—

A granule of each, together, every quarter-of-an-hour until sedation.

If spasmodic symptoms manifest themselves, especially such as affect respiration and deglutition, they must be combated by hyosciamine and aconitine :—

A granule of each, together, every half-hour.

Among the diphtherias must be classed :

1. **Glanders** *(La rhinite jettatoire).*—This disease is rarely

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* The parasitic nature of the diphtherias can now no longer be contested, since it has been demonstrated by the microscope. What the ancients called *monads*, are those infinitely-small particles which float in space, and which, entering the lower atmospheric strata, that is to say, our respiratory field, invade us through all our pores. There, if they encounter vital resistance, they are repulsed or die, like the noxious weed in a well-tilled field. This proves that in epidemics the system should be strengthened and not weakened.

spontaneous or primitive in man, who generally contracts it from glandered horses. The pituitary membrane is of a red brown colour, and looks wrinkled on account of the development of the muciparous follicles which secrete a viscous liquid, at first of a whitish and afterwards of a yellowish tint, which is very contagious. There is lachrymation arising from the extension of the irritation along the nasal canal. The surrounding lymphatic glands are engorged (mumps).

Glanders must not be confounded with coryza, in which the discharge is serous, although, indeed, it acquires sometimes an acrity which attacks the nostrils and lips.

Coryza arises generally in the frontal or maxillary sinuses, the membranes of which are almost serous. Glanders attacks, on the contrary, the mucous follicles. Sometimes it reaches the lungs, in cases where the infection of the glanders has been introduced through the respiration (pulmonary glanders). The accompanying fever is very intense, and should be combated from the commencement by arseniate of strychnine and arseniate of quinine, so as to ward off symptoms of prostration and periodicity; for, like as in every absorptive fever, there is accession or increase :—

A granule of each, together, every half-hour, and then every hour, according to the diminution of the fever.

The patient should sniff up chlorine-water,* and the Seidlitz salt must be given as a refrigerant.

2. **The stomato-exudatives:** *aphthous*, *pultaceous*, *pseudo-membranous or buff-like*, all arise from the same cause, and require the same treatment. In order that this class of diphtherias may take place, it need not necessarily be always epidemic, since the zymogenic organisms are formed in the exudations, which result from local irritations or neglect of cleanliness. In the case of infants at the breast, the nurse

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* Chlorine-water and other antiseptic solutions might be inhaled in the form of fine spray by employing a steam-atomizer.—H.A.A.

must take the internal remedies, and the treatment of the former must be limited to external measures.

3. **True diphtheria** is characterised by the formation of plates, polypous concretions, and false membranes due to parasites (micrococci), which cause an occlusion of the principal passages, and threaten suffocation. The treatment, therefore, cannot be too sufficiently active. The back of the throat must be painted with pure lemon-juice, and sulphide of calcium administered until the intestinal gas emits an odour of sulphuretted hydrogen. Not only is this gas innoxious, but it has the property of preventing the formation of ammoniacal compounds (carbonate), which induce a typhoid condition by decomposing the blood.

Seidlitz salt must be used to cleanse the intestine, and fever should be combated by arseniate of quinine, the accessions being cut short by aconitine and veratrine:—

A granule of each, together, every half-hour until sedation.

4. **Croup.**—There are two kinds of croup, one primary, and the other caused by the extension of diphtheria. The first variety is the most dangerous, on account of the difficulty in getting at the false membranes or skins which spread themselves sometimes throughout the whole tracheal tree. Emetic or emetine must, therefore, be administered from the commencement:—

A granule of either every quarter-of-an-hour until the desired effect;

and on the production of vomiting, sulphide of calcium should be administered until sulphuretted hydrogen gas begins to be emitted.

Paroxysms of fever will be best combated by hydroferrocyanate of quinine:—

A granule every half-hour until the paroxysm ceases.

5. **Hooping-Cough.**—I class the hooping-cough among the diphtherias because it attacks the respiratory passages and is essentially contagious. The disease is of a paroxysmal

character, and although no false membrane exists, the secretion is viscid, and with difficulty expelled; thence the cough, preceded by a long inspiration, and having that peculiar sound like the crowing of a cock.

From my own observations, I believe I am right in asserting that hooping-cough is caused by parasites of the genus *penicillia*, which attach themselves to the mucous membranes of the larynx and trachea, and which the vibratile epithelium is unable to dislodge. In the trachea of a child aged three years, which died in an asthmatic paroxysm, produced by hooping-cough, I found on the extremities of the vibratile prolongations, those small corpuscles, which, like carmine, manifested the Brownian movements.

What also lends support to this opinion is the fact that the sulphurous preparations calm the paroxysms of hooping-cough. I have prescribed, with uniform success, sulphide of calcium internally:—

Three or four granules a-day for a child aged three or four years.

The fever which accompanies hooping-cough, the paroxysms of which might prove fatal, should be combated by aconitine and hydroferrocyanate of quinine:—

A granule of each, together, in the intervals of spasmodic coughing.

Narcotics must be avoided, but expectoration should be facilitated by syrup of ipecacuanha. If broncho-pneumonia supervenes, characterised by sibilant râles and moist crepitation, difficult respiration, with injection of the face, pulse 110, and the temperature 40°c., etc., it must be vigorously attacked by revulsives to the lower extremities, Seidlitz salt to clear the intestinal passage, and veratrine, which must be pushed to counter-stimulation:—

A granule every half-hour until the desired effect.

The danger having passed, recourse must again be had to hydroferrocyanate of quinine, in order to prevent fresh accessions:—

A granule every half-hour until complete sedation.

Hooping-cough has remained till now rebellious to the powers of art, because these have been wrongly employed, or rather, they have not been employed at all, for that is not a proper treatment of the disease which relies upon expectorants. In sound therapeutics, the cause and the effects (symptoms) must be combated at the same time. Thus dosimetry acts.

When hooping-cough assumes an epidemic form, it makes numerous victims among young children. Adults are not exempt.

It would be wrong, therefore, to consider it as an affection of slight importance. (Vide *Manuel des Maladies des Enfants.*)

6. Œdema of the Glottis or Virulent Laryngitis.—I have confirmed the fact that this symptom,—which may prove rapidly fatal,—follows bites inflicted by rabid or hydrophobic animals. It is not essential that madness should be distinctly manifested, for the patient, when the wound is already in course of cicatrization (which indicates the longer or shorter incubation period of the rabic virus), is suddenly seized with a constriction or laryngeal spasm, with hoarse voice and expulsion of minute bubbles; the respiration is whistling and embarrassed; the face is injected, and the eyes assume that brilliancy and expression of anxiety which characterise most stridulous diseases. The skin is hot (40°c.), and the pulse small and accelerated.

The patient manifests a condition of extraordinary agitation, and wanders from his bed, especially if the paroxysm happens in the night, as is most usual. The second or third paroxysm is fatal, because it terminates in œdema of the glottis.

There is not, therefore, properly speaking, anything of diphtheria; but the cause being a poison, assimilates this disease somewhat to the former.

As regards the treatment, it is useless to cauterize the wound, since it is already healed, or is in process of cicatrization. It can, however, be done as an extra precaution.

Hydroferrocyanate of quinine, digitaline, and hyosciamine, must be administered internally, so as to calm the paroxysms and diminish the congestive effort of the heart :—

A granule of each every quarter-of-an-hour until sedation.

That being effected, it should be maintained by a potion of chloral and chlorhydrate of morphine :—

A granule, with 30 grains of hydrate of chloral, dissolved in a tablespoonful of simple syrup, to be repeated, if necessary, should sleep be delayed beyond half-an-hour.

The medication should be resumed if, when the patient awakes there is still danger of suffocation.

Such should be the treatment of hydrophobia, against which we are as yet unacquainted with any specific.*

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* Dr. Burggraeve has recently communicated an article on the dosimetric treatment of rabies to the *Répertoire.* He advocates the administration, at the same time, of granules of *arseniate of strychnine, hyosciamine, cicutine*, and *monobromide of camphor*, and the hypodermic injections of *subnitrate of pilocarpine.* His reasons for such treatment are most rational:

"Knowing nothing of the precise nature of the rabic virus, and consequently having no antidote for it, all we can do is to endeavour to get it eliminated as quickly as possible. The hypodermic injections of subnitrate of pilocarpine are thus a great resource on account of the rapid and abundant salivation they determine.

"As to the simultaneous administration of *arseniate of strychnine* and *hyosciamine,* it is called for by the laryngeal symptoms, indicating spasm and paralysis, in other terms, rupture of the physiological equilibrium between the constrictor and dilator muscles of the glottis. Now we have shown that the upper laryngeal nerves are constrictors, and it results from the experiments of M. Pasteur, that it is precisely in the medulla that the rabic virus locates itself more especially. The hyosciamine would combat this neurosis, whilst the strychnine would fortify and increase the action of the lower laryngeal nerves. With regard to the *monobromide of camphor,* it is, as we all know, a powerful hyposthenic agent.

"The cerebral inoculations of M. Pasteur also show whence proceed the symptoms of hallucination in rabies, whilst they indicate the means of counteracting them."

Relief might also be obtained from hypodermic injections of *curara*, Chapman's spinal ice-bag, or the hot-air bath.—H.A.A.

This terrible affection, which is said to be spontaneous in dogs, has been considered as a hysteria. It is quite possible that sexual excitement may be a predisposing cause, since rabies rarely declares itself among those dogs which rove about in a natural state, as in the East. In all such cases, monobromide of camphor must be given on the least appearance of that kind of excitement:—

A granule every half-hour until sedation.

The animal must be plunged by its hind quarters into cold water.

It would be more rational not to condemn these animals to a life contrary to nature, and to restrain the number by a tax. It is especially among breed or fancy dogs that sexual excitation may lead to hydrophobia. Such animals, therefore, should be suppressed.*

Dr. Marochetti, an Italian physician, has pointed out in cases of hydrophobia, on each side of the frænum of the tongue, a small vesicle containing a citrine liquid, which he considers to be the reservoirs of the rabic virus. These vesicles are nothing more than the salivary ducts, the necks of which have been obstructed. It is now well known that the virus is transmitted by the saliva. It will be most prudent, therefore, to cauterize these miniature ranulæ.

Dyers' broom (*Genista tinctoria*) has been considered as an antidote to hydrophobia. If there is any preservative virtue in this plant, it can only be by reason of its purgative and diuretic properties.†

7. Angina Pectoris.—This is an affection which is also allied to the diphtherias, because, independently of the tracheal spasm, the bronchi are obstructed by a viscid fluid, and pulmonary œdema may be the consequence of it.

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* Dr. Dolan, of Halifax, has contributed to the medical journals many valuable articles on the legislation of this subject.—H.A.A.

† The most rational proceeding on the part of persons bitten by rabid animals is to have the bites excised and cauterized at once, and then, for six or eight weeks, to have daily hot-air or Turkish baths, so as, if possible, to eliminate the virus.—H.A.A.

The disease assumes sometimes an epidemic form, in consequence of certain miasmatic conditions of the atmosphere. The malady is paroxysmal, and is characterised by a retrosternal spasm, with whistling respiration, dyspnœa, and palpitation.

It must not be confounded with sternalgia, of which I shall speak later on. (Vide *Neuralgias.*)

Angina pectoris must be combated by hydroferrocyanate of quinine, digitaline, and hyosciamine:—

A granule of each, together, every half-hour until sedation.

A large camphorated blister should be applied to the chest, and the intestinal canal must be cleansed by the Seidlitz salt, after sedation has been produced by the granules.

CONGESTIONS.—HÆMORRHAGES.

These accidents differ, according to whether they happen in the arterial capillary or the venous capillary system.

The former take place at the expense of the red arterial blood, and are preceded by an effort which has been termed *molimen hæmorrhagicum.* The congested parts are engorged, and a sensation of burning or boiling, a kind of tenesmus, is experienced in them, like as in active hæmorrhagic flux.

In the latter, on the contrary, the blood is black or venous, and a torpid or heavy sensation is experienced.

Hence, two treatments; by defervescents and excitants.

The hæmorrhagic congestions should be combated by bleeding, digitaline and aconitine, in a word, by the defervescents; whilst the venous congestions should be treated by the fixed tonics, such as the ferruginous, especially hydroferrocyanate of quinine, which constitutes also a powerful antihæmorrhagic.

Active congestions forcibly excite the vitality, and hæmorrhage, in such cases, is rather useful than hurtf observed in epistaxis, occurring in the course of inflamm fevers. In this respect, a hæmoptysis may be salutary, when there exists a material cause, as tubercles, becau relieves congestion. It is not, therefore, always prude stop it by astringents, but it must be moderated by digi and ergotine :—

A granule of each every half-hour.

Venous congestion is of an asphyxic nature, becaus red blood-globules, deprived of movement, are no l oxygenated. These are the congestions which produc algid fevers, of which I have already spoken. (Vide *Fev*

Cerebral Congestions.—Apoplexies.—Cerebral conges are mostly venous, because the capillaries being very ten escape more easily the congestive effort. The white subs which they traverse, is very compact ; when they are atta it is usually in the grey substance. Unfortunately, it is that the cerebral softenings are first formed. Persons sanguine temperament, such as those who have much work, ought therefore to maintain the freshness of the by the daily use of Seidlitz salt. Those who suffer megrim will receive relief from cafeine (arseniate and citrat

Two granules of each, every half-hour, until cessation of the hea

Cerebral venous congestion establishes itself gradual the intra-vertebral sinuses ; it is therefore often precede bleeding or non-bleeding hæmorrhoids. In the latter ca is necessary to relieve the congestion of the hæmorrh venous plexus by the application of leeches to the anus.

In all such cases the blood should be reconstructe arseniate of iron, which renders it more active and bri for in the hæmorrhoidal state there is a venous con which must be converted into an arterial one. (Vide *Hæ hagic diatheses*) :—

Arseniate of iron, five or six granules a-day.

To which must be added hyosciamine or atropine to combat the anal tenesmus :—

Two granules daily.

But it will be necessary to watch the action of these alkaloids on the eyes and brain, for if they produce too much torpor, they must be discontinued.

Cerebral Fever (Apoplectiform.)—This fever is often caused by paludal poisoning. Having all the symptoms of apoplexy, it has, however, a paroxysmal character, that is to say, the symptoms cease suddenly, to reappear again. The attentive observer may recognise the three stages of fever: cold, heat, and sweating.

General bleeding being likely to prove fatal in the first stage, it is always advisable to wait, in order to be sure that this stage has passed, and then to be guided by the state of reaction. If the temperature rises above 39°c. and the pulse above 100, aconitine and veratrine must be administered :—

A granule of each, every half-hour, until defervescence;

and immediately after the paroxysm, quinine (sulphate, arseniate, hydroferrocyanate) must be given, so as to prevent a fresh attack, which might be fatal :—

A granule every half-hour, until the functions have returned to their normal condition.

The administration of Seidlitz salt, as a refrigerant, must also be insisted upon :—

Three or four teaspoonfuls in a glass of water, to be followed by two or three glasses of fresh water.

Serous Apoplexy was known to the ancients; this disease not being apparent outwardly, the face, on the contrary, being pale, the same remedies must be used as for venous congestion. Nervous apoplexy, consists in a paralysis of the brain, without total congestion, and necessitates the employment of arseniate of strychnine :—

A granule every half-hour, until the cerebral symptoms are relieved;

that is to say until the pulse, which was hardly perceptible, makes itself felt again, and the patient recovers consciousness. These paralyses may simulate death, and sometimes in these cases the physician is obliged to have recourse to galvanism.

Cerebral Hæmorrhage.—The patient may be struck suddenly as though with a thunderbolt, when the vessel ruptured is of some importance. Most often this form of hæmorrhage is connected with a disease of the arterial system—atheromatous degenerations. (Vide *Organic lesions.*) The patient, however, must not be left to die, but on the contrary he must receive energetic assistance. Ice must be applied to the head; clysters containing chloride of sodium (common salt) must be given; energetic frictions over the whole surface of the body should be performed, and dry cupping must be carried out until the circulation becomes restored. It will be advisable to abstain from general bleeding, or at least not to practise it until the patient recovers consciousness. When the patient is able to swallow, arseniate of strychnine must be given :—

A granule every half-hour.

The ethers may act as anæsthetics in cases of cerebral hæmorrhage. They must not therefore be employed. It is known, moreover, that chloroform prevents the oxydation of the red blood-globules.

The employment of arseniate of strychnine in dosimetric doses will have the effect of gradually restoring the movements; for thus administered, it acts less on the nervous centres than on the complaint. Magendie has already pointed out that strychnine acts at first on the muscular system. To give large doses of nux vomica, is only to expose the patient to fresh congestions.

Persons predisposed to cerebral congestions ought to submit themselves to a saline regimen, so as to render the nervous substance more dense. The more compact is this *tissue,* and the more difficult it is for the blood to penetrate it, and consequently the brain is more active. Under these conditions, the organ is less fatigued. It is now over thirty years since I began to make a daily use of Seidlitz salt, and during the whole of that time I have possessed a cerebral activity which astonishes even myself. I can, with impunity, do head-work for five or six hours together, without experiencing the least fatigue, and ideas flow like water from the soil. Without the Seidlitz, it would have been impossible for me to produce so much. Slanderous tongues will say that quantity is not equal to quality. Of that, obviously, I cannot judge; but I will say it is sad to see fine geniuses unexpectedly terminate their career for want of applying to themselves the rules of hygiene. It may be said that great minds do not die, but that they kill themselves. I propose to live as long as possible, in order to prove my modesty.

Ocular Congestions.—*Amblyopia; Amaurosis.*—These congestions occur chiefly among spirit-drinkers, and end in the production of the sclerotic state, that is to say, the conversion of the retina into a dense nacreous tissue, in which the nerves and capillaries have disappeared. It may then be said that the injury is irreparable. So long as the above lesions are absent, there is reasonable hope that even if the sight be not completely re-established, at least blindness may be prevented. To effect this, phosphoric acid and sulphate of strychnine must be given:—

Twenty granules of each, daily, gradually increased to that number.

Amaurotic amblyopia may be symptomatic of a verminous affection. In that case, the suspensive action of the pneumogastric must be admitted, and it should be remembered that the ciliary nerves belong to the ganglionic chain of the great sympathetic. Arseniate of strychnine must be employed conjointly with santonine:—

A granule of each, up to four or six, daily, according to age, and the following morning a dessert-spoonful of castor oil.

If there is spasm, a granule of hyosciame must be added.

Otic Congestions.—*Buzzings in the ears.*—These congestions, when they are profound, that is to say, when they extend as far as the lobules of the cerebellum, are accompanied by disturbances in the co-ordination of the movements. Flourens proved that by destroying the semicircular canals of rabbits and pigeons, walking or regular flight was impossible, from the movements of turning round which were produced. Noises in the ears (singing, buzzing, humming) of a congestive nature, require the use of digitaline and strychnine:—

A granule of each, together, three or four times a-day.

For dryness of the ears, vapour baths and fine oil of almonds must be employed.

Freedom of the functions must be maintained by the Seidlitz salt.

Pulmonary Congestions.—These are active or passive. The former are announced by a reaction (*molimen hæmorrhagicum*), with a feeling of ebullition in the chest; the face is injected, the eyes sparkle, the pulse is quick and vibratory, the cough is jerking and painful, and the respiration is performed with difficulty. The expectoration is frothy and sanguinolent.

It is necessary to bleed and to give strychnine (sulphate), aconitine and veratrine:—

A granule of each, every half-hour.

At the same time, iced drinks must be administered, and the intestinal canal cleansed by the Seidlitz salt.

Passive congestion, arising from some obstacle to the free course of the blood, or to a diminution of the pulmonary capacity from hepatisation, or tubercles, and likewise from rents, erosions, etc., takes place, with a great flow of blood and the formation of clots. There is a difficulty of breathing and danger of suffocation. The face is pale and the extremities are cold, and a variable quantity of dull-brownish or almost black blood may be discharged.

As soon as the blood clots have been got rid of, it will be necessary to condense the pulmonary tissue by arseniate of strychnine, tannic acid, ergotine and quinine (arseniate, hydroferrocyanate) :—

A granule of each, every quarter-of-an-hour.

Acidulated drinks, absolute rest, and Seidlitz salt, will also be required.

On the cessation of the pulmonary hæmorrhage, a reaction may take place with elevation of temperature (39°, 40°c.), hard pulse, and a return of all the precursory symptoms of hæmoptysis. Venesection must be again performed and defervescents given—aconitine or veratrine and digitaline :—

A granule of each every half-hour, until complete sedation.

Pulmonary fever of a larval character requires the employment of quinine, preferably the arseniate and the hydroferrocyanate. This fever may be recognised by its abrupt appearance, by the prevalent medical constitution, and by the three stages of cold, heat, and sweating. As soon as the cold stage has passed away, there must then be given :—

Arseniate of quinine, hydroferrocyanate of quinine; a granule of each every half-hour, until cessation of the symptoms.

Hæmoptysis arising from organic heart disease, should be combated by digitaline and arseniate of iron with mineral acids :—

A granule of each, every half-hour.

15 to 20 drops of neutral perchloride of iron, in a spoonful of iced water, several times a day, according to the importance of the hæmorrhage. Ice to be applied to the chest. Seidlitz salt as a refrigerant.

Cardiac Congestions *(active, passive)*.—Active congestions of the heart predispose to organic maladies of that organ. Due, most often to moral causes, they are instantaneous, with a feeling of retro-sternal constriction, followed by a bounding of the heart, as though it would escape from the thorax. If this condition persists, and the pulse continues hard, it will be necessary to bleed, and immediately afterwards to give digitaline and arseniate of strychnine; for it is important the first place, to restore the regularity of the contractic by giving tone to the organ :—

A granule of each, until complete sedation.

It is an error to suppose that because the patient has b bled, all has been done: on the contrary, only mechan accidents have been guarded against. What is called nerv disorder of the heart, is only the result of disturbance tak place in the rhythmical movements of that organ from s moral cause. There are no congestions of the heart sim to those of the parenchymatous organs, such as the lur liver, etc. It is in the cavities of the heart that the con tions take place, and those cavities—auricles or ventricle become finally distended. Thence, the necessity of gi together digitaline and strychnine, so as to calm, and at same time give tonicity to the centre of circulation.

In consequence of the terrible events of 1792-93, an e mous number of cases of heart disease occurred, which ena Corvisart to compile his immortal work. It is probable if digitaline and arseniate of strychnine had been then kno that great practitioner would have profited by them. L on I shall treat of inflammations of the heart and its m branes.

Hepatic Congestions.—These congestions are rarely ac and are dependent on stasis of the blood in the portal and its branches. In lieu of a centre of impulse, nature given to the liver a contractile capsule or cellulo-vasc membrane (Glisson's capsule). Notwithstanding this caution, the liver is easily congested, and it must be aided quassine and arseniate of strychnine, which at the same cause the bile to flow into the duodenum :—

Four to six granules of each, daily. The quassine shortly before m the strychnine in the intervals.

Care must be taken to unload the intestinal canal

Seidlitz salt, which will also have the effect of maintaining the fluidity of the blood, because it is for want of such fluidity that engorgements of the liver take place.

These engorgements have the effect of compressing the hepatic cells, and thus preventing the elimination of the bile principles. Hence, the frequency of jaundiced conditions or icterus.

Congestions of the liver may also depend on obstruction of the hepatic veins, the result of organic diseases of the heart (*nutmeg liver*). Strychnine and digitaline must therefore be given together. (Vide *Congestions of the Heart.*)

Splenic Congestions.—The same considerations are attached to splenic congestions, which are accompanied by a pain in the side (*stitch*), which might cause them to be mistaken for pleurodynia, if plessimetry (*mediate percussion*) and the splenic complexion* or the colour like old ivory did not permit a diagnosis to be made. These congestions often give rise to hæmatemesis, on account of the reflux of the blood in the gastro-splenic veins. The same treatment must be employed as in hepatic congestions.

Paludal miasm produces congestion of the liver and spleen, by preventing the oxydation of red globules, probably on account of the hydro-carbonated gases which exist in the water and air of marshy regions; for it is as much by gastro-intestinal as by pulmonary absorption, that the gases are introduced into the blood. Arseniate of soda and arseniate of quinine, are the two modifying agents which must be employed:—

Ten granules of each a-day, two by two, between meals.

Since the discovery of quinine, and its administration in intermittent fevers, the upholders of cinchona in substance have pretended that its alkaloid would produce engorgements of the liver and spleen. This was a singular reasoning on the part of those who were abusing so enormously the bark of the Peruvian tree. It has been observed, on the contrary, that since that epoch, dropsies, caused by obstructions of the liver and spleen, have become less frequent.

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* *Splenic cachexia* may be recognised generally by a peculiar anæmic appearance of the mucous membranes and skin, the former being pale and bloodless, and the latter of a waxy, earthy, or sallow aspect.—H.A.A.

The alkalines are generally abused in abdominal engorgements. Of mineral waters, choice must be made particularly of those which contain saline, ferruginous, and arseniated elements, such as the waters of Bourboule. These waters are thermal (54°c.), and contain:—bicarbonate of soda, 2 grammes 27 centigrammes; chloride of sodium, 3 grammes 245 centigrammes; bicarbonate of protoxide of iron, 6 centigrammes; arseniate of soda, 617 centigrammes; free carbonic acid, 900 centigrammes in a litre of water.* It is evident that these are, in a great measure, the inorganic elements which the blood contains in its normal state, and which are deficient in engorgement of the portal vein. On that account, the ancients said: "*Vena portarum, porta malorum.*"

Those whose means do not permit them to visit these waters, should substitute for them the Seidlitz salt and the arseniates, as I have previously mentioned.

Intestinal Congestions.—These congestions are caused, generally, by a sudden chilling of the peripheral surface of the body, especially of the feet. They may depend also on miasmatic agency, as in Asiatic cholera and the pernicious fevers. The cyanosis extends then by degrees to all the organs and to the periphery of the body. Haste must be made to restore the heat by energetic frictions, and not by artificial warmth, which would have no other effect than to hasten mortification, as is observed in cases of frost-bites. The patient must be warmly but lightly covered (with an eider-down coverlet, for example), and frictions should be made *under* the coverings with a warming liquid (brandy, aromatic vinegar, etc.). The ethers must not be given, as they increase still more the asphyxia of the blood, neither should the essential oils (mint, camomile, etc.) be administered, because they burn the mucous membranes. On the contrary, small pieces of ice must be given to the patient, who is suffering from inward heat. (Vide *Cholera.*) Colics must be combated by hyosciamine and strychnine.

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* The gramme is about 15½ grains *troy*; the centigramme is equal to 1-6 grain; the litre is about ⅞ of an imperial quart.—H.A.A.

A granule of each, together, every quarter or every half-hour.

In reference to what might at first sight appear contradictory in the above treatment, I would observe that in colic there is a rupture of the equilibrium between the circular and the longitudinal fibres. It is so in saturnine colic, where no result is obtained except by the association of hyosciamine and strychnine. In order to promote the sliding of the intestinal matters, a table-spoonful of olive oil should be given in preference to castor oil, which contains an acrid principle when it is not quite fresh, as is usually the case with the castor oil of commerce.

I would mention here, relatively to the employment of castor oil, that it contains, first, a solid matter, representing two-thirds of the weight of the oil, and which constitutes the residue; second, a colourless volatile oil, very homogeneous, crystallising by cooling, and which, on saponification, yields three fat acids,—ricinic, elaidic, and margaric, of which the two first are extremely acrid; hence the colics which castor oil causes with many persons, and the more so when there is congestion of the intestine.*

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* It is a common custom with most persons when suffering from "pain in the bowels," congestive or otherwise, to fly to strong purgatives for relief. Their belief is that a "good purge" will remove the pain, and cause a subsidence of all the other symptoms. In fact, a purgative is considered to be a remedy of universal application in every manner of disease, no matter how different. To illustrate the danger of this so-called "clearing out," the following article from the *British Medical*

Congestion of the large intestine gives rise to dysentery. This breaks out especially in humid seasons and in low and marshy localities. It may also be produced from overcrowding, as in barracks and camps, and it then assumes a character eminently contagious. The submucous tissues are especially congested, giving to the intestine a lardaceous condition; the mucous membrane is red and covered with

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Journal of November 5th, 1881, entitled "The Passion for Purgatives," may with advantage be quoted:—"The passion for purgatives, and the belief in their universal applicability, has been ridiculed by satirists and surgeons, from Voltaire to Skey, but it still survives. A boy, aged 4½ years, named Frederick Dillnutt, has recently met with his death through the administration of a druggist's purgative powder. At the inquest, it was stated that the deceased had been ill for a day or two, and stayed away from school. It was not thought that he was seriously ill, and the mother gave him a purgative powder. He became worse after having the powder, and died during the night, as he was being carried from one bedroom to another. Mr. John Brighouse, of 93, Tollington Park, stated that deceased was dead when he was summoned to attend him. On making a *post-mortem* examination, he found the whole of the organs healthy, the death having resulted from failure of the heart's action. The stomach and intestines were quite empty, which was no doubt owing to the strong purgative powder which had been given. From what he had heard of the case, he had come to the conclusion that death had been actually caused by the strong purgative powder. He wished it to be distinctly understood, that to give a child a strong opening powder on the slightest appearance of sickness was to place the life of that child in great danger; and the jury would, of course, know that in the majority of instances parents went to a druggist for a powder. The coroner said that his experience had shown him the truth of Mr. Brighouse's remarks, and he hoped the press would make the case known. The jury returned a verdict that the deceased died from the administration of a purgative powder, and appealed to the members of the press to use their best endeavours in bringing a knowledge of the dangers of such powders to the public. The purgative powder is the pharmaceutist's panacea, and the apothecary's cure-all. Although the most common, it is probably the most dangerous and the most-often abused weapon in the pharmacopœa. Prescribing druggists fly to it as their first implement and most favourite nostrum. How many has it not slain? and how many thousands are yet doomed to die from 'a simple purge'?" It is to be hoped that a knowledge of the danger will deter from the use of purgatives without skilled medical advice.—H.A.A.

erosions, on account of the acrity of the intestinal matters. These disorders may be avoided by proper hygiene, by the daily cleansing of the intestine by the Seidlitz salt, and by the employment of hyosciamine and strychnine to regulate the intestinal movements.

As to the paludal diathesis, it must be combated by arseniate or hydroferrocyanate of quinine.

Leeches must be applied to the anus only in those cases which are accompanied by a hæmorrhoidal condition.

General lotions of vinegar and water will prove very useful in these cases.

The nourishment should be substantial and in small quantity at a time. Feculent or flatulent foods must be avoided.

Opiates must be abstained from, so as not to increase the intestinal obstruction and thus retain the toxic matters (gases or solid substances), the absorption of which would give rise to a typhoid state. As the principal drink, water with a small quantity of Seidlitz salt dissolved in it, to render it more digestible, must be given to the patient.

Renal Congestion.--Renal congestion is accompanied with spasm or nephritic colic, which often terminates in the emission of bloody urine. It is generally caused by a chill to the feet in very sensitive persons. It must be combated by warm baths and the internal administration of hyosciamine and digitaline :—

A granule of each, every half-hour, until cessation of the nephritic spasms and re-establishment of the urinary flow.

If the latter should be tardy, strychnine (sulphate) must be added to the hyosciamine and digitaline.

Vesical Congestion.—Inasmuch as it is only a simple receptacle, the bladder, with its membranous walls, is less subject to congestions than the kidneys, its functions being purely passive. What characterises these congestions, is the painful spasm of the neck which induces paralysis of the body of the

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viscus, so that to cicutine and hyosciamine, strychnine must be added :—

A granule of each every half-hour. Hot baths. Seidlitz salt.

Recourse must not be had to surgical measures unless at the last extremity. Catheterism, especially if violent, is a very uncertain operation, unless employed with the utmost precaution.

Renal and vesical congestions often arise from miasmatic causes. In such cases recourse must be had to hydroferrocyanate of quinine :—

A granule every half-hour, until cessation of the symptoms.

Uterine Congestions.—This congestion can be brought about by the orgasm of the womb, which is rather a repulsive than an attractive force. As the natural congestion cannot take place without the organ suffering, it must therefore be relaxed by warm baths, and by ergotine, strychnine, cicutine and hyosciamine :—

A granule of each, three or four times daily.

If the dysmenorrhœa is due to chloro-anæmia, arseniate of iron must be given :—

A granule, 10 to 12 times a-day.

Leeches and cupping-glasses must not be applied to the womb unless there be some special indication ; it is better to apply them, if necessary, to the lower extremities, especially to the ankles.

Nervous or Neuralgic Congestions.—These congestions take place in the nerve-sheaths,* causing strangulation and often very acute suffering. To exemplify, I may mention the facial neuralgias, which are often accompanied with inflammation of the gums and cheek. If the nerve is superficial, it produces in its course a red track, which is sensitive to the touch. These congestions have the character of periodicity; therefore, independently of the defervescents, they must be attacked by the antiperiodics:—

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* Neurilema.

Aconitine and hydroferrocyanate of quinine; a granule of each every half-hour, until sedation.

If the neuralgia is due to chloro-anæmia, arseniate of iron must be administered:—

Five or six granules daily.

Neuralgia often has a uræmic origin (Vide *that diathesis*). In such a case, benzoic acid and the benzoates must be given (ammonia, lithia, or soda):—

A granule of each, together, until the urine becomes clear.

Congestions of the nerves, or neuralgias, take place along the track of the nerves, the anatomical distribution of which they mark out, and they assume certain physiological peculiarities. The pain which accompanies them is very severe, with or without spasm, according to the nature of the nerves which are attacked. The pains, which are more or less intense, are paroxysmal, of some hours' duration, sometimes lasting several days, or even some weeks or a month. In course of time, the pains cease, leaving a tendency to paralysis from atrophy; the nerves are then converted into fibrous cords, without any sensibility.

Neuralgias attack the nervous centres and their envelopes, as well as the peripheral nerves. They are due sometimes to general, and sometimes to local causes.

Among the former may be reckoned internal causes, such as the different diatheses and paludal miasms; among the latter, external irritations, inflammations, foreign bodies, tetanus, etc.

Neuralgias, therefore, are more or less persistent or inherent;

they assume continuous, remittent or intermittent characters. The treatment must be *predominating*, directed to the cause, as well as *variable*, directed to the effects (symptoms).

As to the former, it will vary according to the causes themselves. Thus, paludal neuralgias must be treated by quinine—arseniate or hydroferrocyanate; chloro-anæmic neuralgias, by the ferruginous preparations (arseniate of iron); scrofulous neuralgias by the iodides; and syphilitic neuralgias by the mercurials, etc.

Neuralgias from external causes often require surgical measures, such as resection of the nerve. Concerning the *variable* treatment, it consists in cutting short the fever by means of aconitine and veratrine; in calming pain and spasm by morphine, hyosciamine, atropine, etc. (either by internal administration, or by hypodermic injections). Sometimes it is needful to cause revulsion by blisters and caustics.

Intra-cranial Neuralgias or Migraine.—These neuralgias may be either direct, or sympathetic; they have their origin in the meningeal nerves (cerebral or ganglionary), which are distributed to the meninges, and from thence penetrate the brain, following the direction of the vessels, which they interlace in their plexuses.

Migraine (*megrim*) is sometimes accompanied by vomitings and great exaltation of sight and hearing. Absolute repose is required; the intestine should be cleansed by Seidlitz salt, and aconitine and cafeine should be administered internally:—

A granule of each, every quarter-of-an-hour, until sedation.

If the migraine exhibits periodicities, it must be combated by:—

Arseniate of quinine or hydroferrocyanate of quinine; a granule every quarter-of-an-hour, during the paroxysm.

If it should depend on chloro-anæmia, arseniate of iron must be given:—

Four to six granules a-day between the paroxysms, and aconitine and cafeine during the paroxysms.

Intra-vertebral Neuralgia.—Intra-vertebral neuralgia or tetanus is the most terrible of all the neuralgias, since it nearly always proves fatal unless it be combated on its first invasion. It is characterised by electric shocks extremely painful, and by tonic convulsions which, commencing at the lower jaw (*trismus*), extend successively to the posterior cervical and vertebral muscles (*opisthotonos*), to the muscles of one side of the chest (*pleurosthotonos*), to the abdominal muscles, to the superior and inferior extremities, and to the internal organs—the heart, lungs, etc.

Tetanus may be spontaneous or accidental: sometimes both combined. Thus in damp seasons, it is often observed to follow operations. The same observation has been made as regards armies in the field.

Tetanus is an acute congestive neuralgia, for there is constantly observed, at the autopsy, a hyperæmia of the spinal cord and its membranes; a sub-arachnoid serous effusion is often present, which is produced a little before death. The nuclei or grey ganglia of the medulla are also hyperæmic and sometimes softened.

The excitation of the cord is produced by galvano-nervous shocks or discharges. It is, as it were, within the peripheral nerves, since the white portion of the cord is but a fasciculus of nerves.

The treatment of tetanus should be rapid, like the disease itself: thus, if it depends upon a wound—puncture or laceration—the ablation of the member must be proceeded with after having placed the patient under the influence of bichloride of methylene. This is unquestionably the most radical measure in traumatic tetanus.

As to internal modifiers, we possess chloral, morphine, strychnine, curarine, hyosciamine, and atropine. The three alkaloids, strychnine, morphine and hyosciamine, or better still, morphine, curarine and atropine, must be administered together, with a chloral potion ; curarine is the congener of strychnine, and atropine of hyosciamine :—

A granule of each, with a dessert-spoonful of the chloral potion. To be repeated every half-hour, until cessation of the tonic spasm.

The action of strychnine may be explained in two ways: either by contraction of the nervous pulp, or by nervous discharge, as with galvanism. Professor Mateucci, an Italian physician, has demonstrated that after having made frogs tetanic by plunging them into a nux vomica bath, they may be detetanised by submitting them to electric discharges or currents. It is known, moreover, that lightning kills instantaneously, by removing the nervous fluid. It may, therefore, be supposed that strychnine, given in small doses and at short intervals, unbraces the nerves, by acting like interrupted galvanic currents. The action of strychnine cannot be otherwise explained in neuralgias in general. It can only be by nervous discharges. It should bring about a congestion of the nervous fluid, an electric tension of the nervous fibre.

Strychnine should have the same effect on the inter-vertebral nerves, and should thus prevent asphyxia.

Curare, belonging to the strychnos family, has the same action, as regards nervous detent; it has, therefore, been an error to regard curarine as antagonistic to strychnine. It is not a counter-poison.

As tetanus terminates sometimes in profuse diaphoresis, the physician should endeavour to provoke the latter by digitaline, and by packing, after the manner of the hydropathists, the general bath being impossible, on account of the rigidity of the body.

It is necessary sometimes to introduce the alkaloids by hypodermic injection, on account of the spasm of the muscles of deglutition.

Orbital Neuralgias.—These neuralgias are either intra or extra-orbital. The former extend to the optic nerve and to the eye-ball, the membranes of which are congested, and visual hyperæsthesia or photophobia is induced, if the optic nerve and retina are attacked. This kind of neuralgia may terminate by causing loss of vision. (Vide *Ocular Congestions*).

The principal general causes which may be mentioned here are rheumatism and syphilis, giving rise to spasmodic movements of the iris to the point of provoking contraction of the pupil. They must, therefore, be attacked by the mydriatics: hyosciamine and atropine :—

A granule of either, morning and night.

The fever must be combated by aconitine and veratrine :—

A granule of each every half-hour during the accession.

Periodicity is to be interrupted by quinine :—

Arseniate of quinine, or hydroferrocyanate of quinine, 10 to 12 granules a-day during the stage of apyrexia.

Extra-orbital Neuralgias.—These neuralgias propagate themselves along the supra and sub-orbital nerves, and belong to the fifth pair (trigeminal) by its ophthalmic and superior maxillary branches. They cause abundant lachrymation, and a hyperæsthetic condition of the conjunctiva, because of the lachrymo-palpebral nerve. They must be combated in a similar manner to the intra-orbital neuralgias, inasmuch as the ophthalmic nerve has communications with the iris by the short root of the ophthalmic ganglion. It is especially in syphilitic neuralgia that the pains radiate beyond the orbit.

Hyperæsthetic Neuralgia of the Nasal Fossæ.—This affection is characterised by obstinate sneezing (sometimes lasting for weeks), accompanied by fever and headache. It is observed particularly during the season of hay harvest in meadow districts, and on that account it has been named *hay-fever*. It yields to the action of quinine, but it is often necessary to send the patients to the sea-coast.

Dental Neuralgia.—Toothache.—These odontalgias are superior or inferior. The former, irradiating along the superior dental nerves, belong to the middle branch of the trigeminal. They may exist without a decayed tooth, but there is always great sensibility, even to the point of rendering mastication painful by reason of the pressure exercised on the dental nerve. This hyperæsthesia extends to the alæ nasi and to the upper lip, inducing slight contractions of them. Lachrymation is often caused, and there is palpebral hyperæsthesia. Inferior dental neuralgia extends along the dental branch of the inferior maxillary, and coincides with a hyperæsthesia of the small lobe of the ear, the concha, and the external auditory canal, by reason of the temporal nerve of the fifth pair. I knew an empiric who cured dental pains by making a small incision on the inner side of the antitragus. He was a simple peasant, and it was often necessary to go to his field to find him. That man, doubtless, did not suspect the anatomical connection which exists between the inferior dental nerve and the temporal branch of the inferior maxillary.

Dental neuralgias are sometimes so obstinate, that resection of the nerve becomes necessary. This operation can be performed beneath the mucous membrane.

The pain may be momentarily calmed, by holding in the mouth a solution of sulphuric ether and alum. It produces very great coldness, and a contraction of the gum-tissue.*

Odontalgic fever should be combated in its continued form by aconitine, and in its periodic form by hydroferrocyanate of quinine.

Epicranial and Facial Neuralgia.—These neuralgias belong to the fifth pair, but radiate to the occipital nerves, the sensitive branches of which they invade, also threatening to encroach upon the cervical cord. The anastomoses of the fifth pair, with the facial nerve, often cause these neuralgias to be of a convulsive character, constituting what is called tic-douloureux. The neuralgias reach the tongue by the nerve of the tympanum and the lingual nerve of the inferior maxillary, and are therefore accompanied by abundant salivation. They likewise provoke lachrymation through the lachrymo-palpebral nerve of the ophthalmic of Willis. It is thus seen that these neuralgias are extremely complex, and also very obstinate. It is therefore necessary to oppose an energetic and persevering treatment. Aconitine, veratrine, digitaline, cicutine, hyosciamine, atropine, strychnine, the arseniates, the iodides, bromide of potassium, the valerianates, and the cyanides of zinc and of iron will be given. Such are the modifiers the physician should employ, according to the intensity and nature of the complaint; for before all, it is necessary to discover the cause.

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* I have often found great relief in toothache to follow from the application to the carious tooth and surrounding tissues, of a syrup composed of equal parts of camphor and chloral hydrate. Cotton-wool may be soaked in the syrup, and gently pressed into the cavity in the tooth.—H.A.A.

Aconitine and veratrine are given against congestive hyperæsthesia; hyosciamine and atropine against spasm; morphine against agitation and insomnia; cicutine against lancinating pains; strychnine against nervous twitchings; the iodides and the bromides against lymphosis; the valerianates against clonic convulsions; and quinine against periodicity.

But all the above remedies are often unsuccessful, unless there be vigorous revulsion, by the application of a caustic at the point of emergence, as in front of the small lobe of the ear, where the nerve is most accessible.

In the continuous form, characterised by elevation of the temperature and acceleration of the pulse, aconitine and veratrine must be given, especially if the neuralgia is of a rheumatic nature:—

A granule of each every quarter-of-an-hour during the whole continuance of the paroxysm.

In the remittent or intermittent form, recourse must be had to arseniate or hydroferrocyanate of quinine, conjoined with arseniate of iron, if the neuralgia is of a paludal or miasmatic character :—

A granule of each every hour, in the interval or at the approach of the paroxysm.

In the chronic form, arseniate of soda and arseniate of antimony must be administered, with arsenious acid as an adjuvant :—

A granule of each, six to eight times a-day.

Between the paroxysms, and at the moment of accession, strychnine (sulphate), cyanide of zinc, hyosciamine, and cicutine must be given as anodynes :—

A granule of each, together, every half-hour.

Tic-douloureux of the face, due to a rheumatic affection of the fifth and seventh pairs, is distinguished at first by symptoms of pain and spasm, with total absence of paralysis, the opposite part preserving its physiological sensibility and mobility. The flow of tears and saliva takes place from the retracted side, which in paralysis is exactly contrary.

Caustic, in this case, should be applied to the point of emergence of the stylo nerves, that is to say, behind the under part of the concha of the ear.

Neuralgia of the Neck.—That ensemble of tetanic symptoms is found here, to which Marshall Hall gave the name of *trachelism.* The muscles of the neck are painfully contracted and stretched like cords, the veins are swollen and dysphagia is complete, with whistling respiration and threat of suffocation. In order to understand these symptoms, it is necessary to describe the whole of the nerves of this region, which belong to the cranial and cervical nerves, such as the hypoglossal, the pneumogastric and its accessory and the ganglia of the great sympathetic, with which these nerves are connected. Therefore, this neuralgia presents a character of extreme gravity.

It must be combated in the same manner as the neuralgias in general, especially by strychnine (sulphate) and hyosciamine, a treatment I found successful in a case under my own care:—

A granule of each, every quarter-of-an-hour, until sedation.

Thoracic Neuralgias.—These include sternalgia and costalgia, characterised by lancinating pains, some radiating towards the neck, and others towards the shoulders and inferior members, and accompanied by tumultuous movements of the respiration, with great cardiac anxiety. Hence the term *angina pectoris*, which has been given to these neuralgias by some authors, although the word *angina* should apply more properly to the exudative affections. (Vide *Diphtherias.*)

These neuralgias, being characterised by periods of accession, must be combated by quinine, hyosciamine and strychnine:—

A granule of each, together, every quarter-of-an-hour, until sedation.

Digitaline and arseniate of iron must then be administered, in order to completely re-establish the functional equilibrium:—

A granule of each, together, three or four times a-day.

It must not be forgotten, that in reality, most of these neuralgias are due to an anæmic or a chloro-anæmic condition. Therefore, cyanide of zinc is also indicated in obstinate cases:—

A granule: 6 to 10 a-day.

Abdominal Neuralgias.—These include: 1. *Diaphragmatic* or *phrenic neuralgias*, with jerking respiration, hiccough, pains radiating towards the neck and ascending along the phrenic or diaphragmatic nerve, towards the shoulder and arm, involving the pharynx and causing spasmodic movements of it, on account of the communication with a branch of the hypoglossal. They must be attacked by hyosciamine, hydroferrocyanate of quinine and strychnine, independently of the causal medication :—

A granule of each, every half-hour, during the paroxysm.

2. *Epigastralgia* extends through to the back and is accompanied by cramp-like pains, with small pulse, leipothymia and cold sweats. It may be distinguished from gastrodynia by the absence of gastric symptoms, such as rejection of a serosity or clear water, and acid risings. The treatment differs, also, since epigastralgia is calmed by hyosciamine, morphine and strychnine; and gastrodynia by the subnitrate of bismuth.

3. *Cœlialgia*, takes its origin in the cœliac plexus, and irradiates along the secondary plexuses—gastric, splenic, hepatic, mesenteric, renal, spermatic, and ovarian, so that it is possible to have as many distinct neuralgias as there are plexuses.

Cœliac Neuralgia is deep-seated, approaching more to the back than to the epigastrium, which distinguishes it from the the neuralgias of the latter region. It induces spasmodic vomitings of the stomach, which, however, cause no sedation of the neuralgia.

Splenalgia occupies either the concave or the convex surface of the spleen. In the former case, it irradiates towards the left shoulder, and in the latter, towards the stomach, with stitch in the side and vomitings.

Hepatodynia follows the direction of the anterior and posterior hepatic plexuses; that is to say, it irradiates either towards the right shoulder or towards the stomach. It is often the cause of spasmodic icterus, on account of the contraction of the biliary passages. It may also be due to the presence of biliary calculi.

4. *Mesenteric Neuralgia (miserere)*, thus named on account of the distress which it causes the patient, and because it is likely to lead to internal strangulation or knotting of the intestine.

5. *Spermato-renal Neuralgia* causes a retraction of the testicle.

6. *Ovario-uterine Neuralgia,* which is observed on the approach of the menses and in dysmenorrhœa. The pains are very acute and affect the inner side of the thighs, as in the spermato-renal neuralgia in man, the corresponding organ—the ovary—being in the belly. It must be opposed by the sedatives, such as hyosciamine and strychnine :—

A granule of each, every half-hour, until cessation of the crisis.

Until now, the only remedies used to alleviate ovario-uterine colics have been the ethers, the gum-resins (assafœtida), and the products of the genital secretions (castoreum). But why excite when it is necessary to calm ? Is not such treatment like those mirages in the desert, which only serve to provoke thirst ? To excite, therefore, the generative organs by the administration of *matrimonium* in pills, is but to add other evils to those we desire to cure.

Bromated camphor may, indeed, be administered if the generative passion should show a tendency to overstep its natural bounds (*nymphomania*). The fire must, therefore, be mitigated without extinguishing it. This can be done by the dosimetric medicaments, such as hyosciamine, ergotine and strychnine (sulphate), which are, when administered together, *inciting* and regulating agents.

Cysto-prostatic Neuralgia.—Spasm of the bladder and of the prostatic portion of the urethral canal is accompanied by dysuria, sometimes with complete retention of urine, which causes many specialists to have recourse to mechanical means (sounds, bougies), which only still further complicate the condition. Before resorting to such measures, always dangerous in these circumstances, recourse must be had to baths, leeches and sedatives, especially to cicutine and hyosciamine, in order to relax the neck of the bladder, and also to strychnine (sulphate) to aid the contractions of the body of that organ :—

A granule of each, together, every half-hour, until sedation of the symptoms.

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DOSIMETRIC TREATMENT of INFLAMMATION.

It is necessary thoroughly to understand the morbid process termed *inflammation*, in order that it may be combated.

As this word indicates, there is an exaggerated combustion, and consequently, the production of products, some organic, such as diphtheritic and other pseudo-membranes, pus, etc.; others chemical, as ammonia, urea, the chlorides, etc.

These are those products of exudation or secretion which give rise to those anatomo-pathologic lesions, consequent upon all inflammation which has not been jugulated at the commencement.

The necessity of jugulation exists, therefore, in inflammations as well as in the pyrexias. We have already had an example in the diphtherias, which form the transition between those two orders of diseases; the one local, the other general. Inflammation takes place under the influence of irritation. All the vitality seems to concentrate itself in the organ which is the seat of that morbid superexcitation, and to withdraw itself from the periphery; hence, the chilliness or the shivering which declares itself at the commencement of every inflammation. The skin is pale, the pulse small, and there is a general prostration, which renders the patient incapable of all movement, and compels him to keep his bed.

In the initial period of the disease, the nervines and sudorifics should be prescribed, in order to bring back the heat and the blood to the periphery, and relieve the point or internal organ where the congestion is set up:—

Phosphoric acid, sulphate of strychnine, digitaline; a granule of each, together, every half-hour, with a warm beverage (elder, borage, etc.), in which a teaspoonful of Seidlitz salt has been dissolved.

The above medication will produce an alvine evacuation, followed by some serous stools, and afterwards an abundant diaphoresis. In reference to this, I must make some remarks.

In every inflammation, there is a vascular erethism of the body, and it is that erethism which precedes and determines the explosion of the conflagration. Certain internal ferments are present, such as fæcin, bilin, sudorin, the urous, etc. These ferments must, therefore, first of all be eliminated. The economy has been suddenly surprised, and has not had time to evacuate these elements of combustion. Hence, the necessity of evacuants at the commencement of inflammatory affections. It may be said that all treatment should commence in that way; and on the other hand, the vitality should be sustained by the nervines.

The reaction which will follow will be frank, and may be efficaciously combated. The physician should, therefore, attentively observe the progress of the fever; and on the least sign of internal embarrassment, he should bleed according to the strength of the patient.

The dosimetric method, therefore, by no means excludes bleeding in inflammations, but it does not make it an absolute rule; the blood-lettings are subordinate to the state of the vitality; and as the treatment commenced by raising the latter by the nervines, the blood-lettings may be made in perfect security and in less quantity. Suppose, indeed, a parenchymatous organ, such as the lung, the tissue of which has been contracted at the very first by strychnine, it is evident that less blood will flow into it; if, on the contrary, a void be produced by bleeding at the commencement of the treatment, the blood would collect in it, and there would be danger, on account of leipothymia. The importance of the law of dosimetric therapeutics—to make the nervines precede (or at least coincide with) bleeding—is thus confirmed.

I direct the special attention of my confrères to this point of doctrine. In medicine, an exclusive system must not be acknowledged.

If now the heat of the skin becomes dry and biting—which indicates an animal temperature of 39°—40°c., as may easily be verified by the thermometer—recourse must be had to the defervescent alkaloids, such as aconitine or veratrine. Indeed, it is now well known with what rapidity those two alkaloids cause the temperature and the pulse to fall. The following Table illustrates it.

Dosimetric employment of Veratrine in Acute Rheumatism.

Aged 44 years. Pains in all the articulations. Pulse, 116; temperature, 39 2-5°c.

DAYS.	DOSES.	HOURS OF OBSERVATION.	VERIFIED EFFECTS.
1st day,	2 milligr.	6.0 p.m.	The fever and articular pains persist, but there is an abundant diaphoresis.
2nd day,	4 milligr.	id.	The fever has diminished. Pulse, 100; temperature, 38 2-10°c.
3rd day,	6 milligr.	id.	Pains less. Pulse, 90; temperature, 35 2-10°c.
4th day,	8 milligr.	id.	Violent pains in the right sterno-clavicular articulation. Veratrine ointment. Cotton-wool dressing.
5th day,	No medicine		
6th day,	id.		
7th day,	7 milligr.	Evening.	Fever completely abated. From this time the patient is convalescent, and leaves, cured, in a few days.

In the morning, care must be taken to wash out the intestinal canal with the Seidlitz salt: for that is a precaution which must not be neglected, on account of the rapidity with which the ferments are formed.

The temperature having fallen to 37°c., it cannot be maintained there, because the focus of the inflammation still exists, on account of the local trouble (pulmonary or other); it oscillates, therefore, between 37° and 39°c., and may even rise to 40°c., constituting the remittent period of the fever; quinine must then be employed, preferably, the hydroferrocyanate, which will have the effect of regulating the circulation and caloricity, as shown by the following Table :

Thermometric Experiments with Hydroferrocyanate of Quinine.

Violent inflammation of the bladder, following contusion.

DAYS.	DOSES.	HOURS OF OBSERVATION.	EFFECTS OBTAINED.
1st day,		5.0 p.m.	Paleness; general chilliness; small and scarcely-perceptible pulse; hypogastrium tight, painful, and dull. The sound brings a large quantity of blackish blood.
2nd day,		8.0 a.m.	The re-action has not declared itself; hypogastrium a little sensitive, dull. Injection of tepid water into the bladder. Return of diluted blood.
3rd day,	10 milligr. of digitaline (one granule every hour)	8.0 a.m. 6.0 p.m.	General re-action. Pulse, 90; temperature, 35 2-5°C. Hypogastrium less tight and less painful. Pulse, 89; temperature, nearly normal.
4th day,	id.	8.0 a.m. 6.0 p.m.	The amelioration is sustained. Hardly any fever.
5th day,	8 milligr. of digitaline.	Evening.	id.
6th day,	6 milligr. of digitaline.	Morning. Evening.	id. id.
7th day,	No medicine	Morning. Evening.	Slight shivering; pain in the hypogastrium, mounting towards the loins; fever. Pulse, 98; temperature, 37 3-5°C. Same condition.
8th day,	10 granules of hydroferrocyanate of quinine, of 0,01 (a granule every ½-hr.)	Evening.	The fever and the hypogastric symptoms have disappeared.
9th day,	No medicine	Morning. Evening.	Apyrexia. A fresh accession.
10th day,	10 granules of the hydroferrocyanate	Evening.	The fever has ceased.
11th day,	6 id.	Evening.	No fever.
12th day,	4 id.	Evening.	id.

There cannot, therefore, be any doubt as regards the action of hydroferrocyanate of quinine, since its first administration moderated the fever, which returned the next day when the medicament had not been administered. It was, therefore, repeated on the following days, and the fever ceased entirely, notwithstanding the gravity of the accident.

I would remark that the temperature never rose beyond $37\frac{5}{10}$°c., and that it even remained for some time below the physiological mean ($35\frac{2}{5}$°c.), which was dependent upon stupor. Thus fever is a relative, and not an absolute state; hence, the necessity of the nervines at the commencement of great inflammations. I cannot too much insist upon this point.

The last period of inflammation or that of anæmia is finally arrived at, which must be combated by arseniate of iron, as shown by the following Table :

Thermometric experiments with Arseniate of Iron.

Contused wound.—Attack of Fever.—Engorgement of the liver and spleen.—General infiltration. The patient had previously taken strong doses of sulphate of quinine.

DATES.	Hours of administration of the Medicamts.	DOSES.	Hours of Observation.	OBSERVATIONS.
Sept. 15	9.30 a.m.	1 milligr.	11.30 a.m.	Skin hot; cheeks injected. Temperature, 39 2-5°C.; pulse, 120. No tendency to sleep. Administration of 1 granule of narceine, which was repeated every hour until the therapeutic effect.
	1.30 p.m.	1 milligr.	3.30 p.m.	
	3.30 p.m.	1 milligr.		
	5.30 p.m.	1 milligr.	7.0 p.m.	
Sept. 16			8.0 a.m.	The patient is without fever. He has reposed well.
	9.30 a.m.	1 milligr.		
	11.30 a.m.	1 milligr.		
	3.30 p.m.	1 milligr.		
	5.30 p.m.	1 milligr.	7.0 p.m.	Fever less. Pulse, 100; temperature, 37 1-5°C.
Sept. 17	9.0 a.m.	1 milligr.		
	2.0 p.m.	1 milligr.		
	6.0 p.m.	1 milligr.	7.0 p.m.	There have been no shiverings. Pulse and temperature reduced.
Sept. 18			8.0 a.m.	Abundant diaphoresis during the night; urine copious; skin moist. Pulse, 100; temperature, 35 2-10°C.
	10.0 a.m.	1 milligr.		
	12.0 noon	1 milligr.		
	4.0 p.m.	1 milligr.	6.0 p.m.	No shivering. Skin warmer. Pulse, 100.
Sept. 19			8.0 a.m.	The patient passed a quiet night. The heat of the skin has disappeared. Pulse, 102; temperature, 34 2-8°C.
	9.0 a.m.	1 milligr.		
	11.0 a.m.	1 milligr.		
	4.0 p.m.		8.0 p.m.	No accession. Pulse, 100; temperature, 32°C. Urine clear and abundant.

On the following days, the arseniate of iron was continued, the dose being four milligrammes per day. That which had to be avoided, was the return of the rigours, for the great variableness of both the pulse and temperature has been pointed out: the former tending to rise and the latter to fall, as is usual in anæmia. The chief point, is to maintain a certain mean of vitality, in order to prevent internal concentrations or accessions. Our practice at the Civil Hospital of Ghent, proves to us, every day, that even in the gravest accidents, inflammatory fever can be jugulated or averted. Expectant medicine has made too many victims that it should be persisted in. There is a responsibility in medicine which cannot be avoided. It is too easy to place everything to the account of the disease; too easy, also, to take advantage of its inactivity, as if by a wise discretion. Sagacity—I will not say science as understood by the organic school—consists in that there may be as little as possible of pathological anatomy. The collectors of *fine cases* are the scourge of humanity; they are, as M. Amédée Latour very judiciously said, "useless naturalists passing their lives in classing and describing the diseases of man."

I might now approach the study of inflammations in particular, keeping exclusively to their dynamic period, that which can be jugulated. In a future chapter, I shall treat of chronic diseases arising from the carelessness of the patients.

DOSIMETRIC TREATMENT OF PARTICULAR INFLAMMATIONS.

Meningitis.—Inflammation of the membranes of the brain is characterised by pungent, lancinating headache—if it is the serous membrane which is especially attacked;—dull pain, if it is the pia mater; and pulsating pain (like the blows of a battering-ram), if it is the dura mater.

The condition of the pulse likewise varies, sometimes quick and small, sometimes full and hard.

As to the symptoms, they are direct or reflex. Amongst the former must be reckoned the deep-seated pain in the eyeballs, the irregular contraction of the pupils, hyperæsthesia of sight and hearing, trismus, grinding of the teeth, delirium, and insomnia; among the latter, vomitings, diarrhœa, constipation, etc.

The fever is continuous, and the temperature of the body rises rapidly to 40° and 41°c., oscillating afterwards at different degrees of the thermometric scale.

The above constitute the whole of the phenomena by which the physician will have to guide himself; the treatment also cannot be unique or uniform: sometimes blood-lettings, at other times purgatives and emetics will be required; it should be, as the saying is, "*tout á tous*," that is to say, taking counsel of the moment.

Thus, "air"* must be given to the cerebral circulation by applying some leeches behind the ears, and allowing the blood to flow gradually. At the same time cold applications must be placed to the head, and the defervescent alkaloids administered internally, such as aconitine and veratrine :—

A granule every quarter-of-an-hour, until the decline of the fever;

and then quinine, which must be given at the moment of the intermissions :—

A granule of hydroferrocyanate of quinine, every quarter-of-an-hour, until perfect regularity of the pulse.

At the least sign of cerebral paralysis—either at the commencement, or in the course of the disease—such as muscular relaxation, involuntary stools and micturition, deafness, dilatation of the pupils, etc., phosphoric acid and sulphate of strychnine must be administered :—

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* The oxygenation of the blood in the cerebral vessels is here referred to, which will be brought about by the re-establishment of the normal circulation, and removal of stagnation or congestion.—H.A.A.

A granule of each, every quarter-of-an-hour, until cessation of the paralytic symptoms.

Meningitis often prevails epidemically—or rather contagiously—in localities where a large number of children are assembled. Dr. G. Goyard, in the *Répertoire de* 1874, has given an account of an epidemic of this kind which prevailed during that year, at Longjumeau (Seine-et-Oise), among the supported Parisian children. There did not exist at that period any particular morbid influence, and the disease only attacked with severity the foster-children. It is probable that many of them, on arrival, already carried the germ of the disease. The meningitis began suddenly with great nervous prostration, and, at the end of some days, the little patients succumbed with symptoms of cerebral paralysis. It was only with arseniate of strychnine and hydroferrocyanate of quinine that they succeeded in saving a few.

The above, moreover, proves that whatever may be the acuteness of the disease, it is necessary to attend to the fever rather than to the local symptoms. Even in tubercular meningitis, which is characterised by atrocious cerebral pains and convulsions, the progress of the disease may still be checked, if the physician understands how to use the alkaloids with discretion ; for observations have been made, which prove that meningeal tubercles may undergo a retrogressive metamorphosis, either fatty or cretaceous, so that the disease is arrested. It is true that the pains persist, but with time the brain becomes habituated to them.

It is, however, necessary to cut short the meningeal fever which occurs in paroxysms and hastens death, because the cerebral congestion which supervenes, terminates in effusion. The latter often is due to hydræmia or cerebral anæmia. In such cases, recourse must be had to the antiperiodics, especially to hydroferrocyanate and arseniate of quinine :—

A granule of each, every quarter-of-an-hour, until the fever declines.

Cerebritis.—Cerebritis has a symptomatology less obvious than meningitis. This fact is explained anatomically and physiologically. Anatomically, since the vessels do not penetrate into the white substance until after they have divided in the pia mater. Physiologically, vivisections demonstrate that the white nervous tissue has not any proper sensibility, and is but an inert mass.

The fever, also, is not so violent, as in meningitis: that is why this inflammation is so often unrecognised, and anatomo-pathologic disorders have time to establish themselves. This is especially true in traumatic cerebritis. Persons have been known to survive the most serious wounds of the brain, even with loss of its substance, and the intellectual faculties have been completely restored. Others, having received a violent blow on the head, and experiencing only a circumscribed pain, have been able to attend to their occupations until inflammatory fever has supervened, and they have succumbed in consequence of cerebral compression. The autopsy has revealed an abscess in the white substance.

It is known that Dupuytren, performing one of those feats of audacity which justifies surgical interference in almost hopeless cases, opened an abscess of that kind by trepanation.*

Consequently, from what has been just stated, no pain in the head, likely to cause fever, must be neglected, but should be attacked energetically by cuppings, revulsives, sedatives, and defervescents: cafeine, aconitine, and veratrine; and the intestinal canal should be especially refreshed by the Seidlitz salt, for all intestinal disorders affect the head. This latter precaution is so much the more necessary as the intestinal matters exercise a pressure on the hæmorrhoidal veins, and so gradually affect the vertebral venous sinuses.

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* The brilliant researches of Drs. Ferrier and Yeo, on "Localisations," point to a very near future when brain diseases and injuries will be capable of accurate diagnosis, and when, by application of antiseptic methods, grave operations will be performed on the brain without inflammation *following*.—M.A.A.

The progress of cerebritis is, therefore, clearly defined. There is at first a dull pain in the head, either circumscribed or general; the pulse is slow, rather than quick, and the intellect is blunted, or there is somnolence. Reflex phenomena, as in meningitis, are rare. It is only at the end of some days that the fever manifests itself by a rigour more or less prolonged. During the whole of this period of the disease, precautions must be taken, such as repose in bed, revulsives to the extremities, vinegar applications on the forehead and nape of the neck, and the internal administration of arseniate of cafeine, in order to prevent congestion:—

A granule every half-hour, until the cerebral dulness or torpor is dissipated.

Sometimes it is necessary to associate arseniate of strychnine with arseniate of cafeine, when the patient remains plunged in sleep, as happens under tropical heats.

Acute Ophthalmias.—The eye faithfully reflects inflammations of the brain. There is, therefore, danger to be apprehended from the extension of these inflammations from one of those organs to the other. It has been stated that in meningitis there are deep-seated pains in the eyeballs, and that amblyopia is often the consequence of serous suffusion on the retina. It is the same in profound ophthalmia,—the cerebral pains are very intense, and thus they re-act upon each other. In this respect, the treatment of acute ophthalmia is similar to that of meningitis and cerebritis: to relieve congestion by leeches or cuppings. The most favourable parts for blood-drawing are the nostrils, the temples, the mastoid apophyses, and the anus, in order to remove the engorgement of the ophthalmic venous plexuses. The cleansing of the intestinal canal by Seidlitz salt must be insisted upon, and the physician should prescribe the defervescent alkaloids:—veratrine, aconitine; the antiperiodics: arseniate and hydroferrocyanate of quinine; the antispasmodics: atropine, hyosciamine; combined with the narcotics: morphine, codeine, narceine, etc. Atropine or veratrine embrocations should be applied round the orbits, and a wadding bandage should be placed over the eye. It is very important to screen the organ from the contact of light, and to keep it immoveable.

In general, in acute ophthalmia, the treatment ought rather to be medical than surgical. The anatomo-pathologic lesions or chronic ophthalmias (so often rebellious to treatment), would thereby be avoided.

In virulent ophthalmia (acute), the conjunctiva must be cauterized with nitrate of silver, and afterwards, both the eyes should be kept immoveable by a cotton-wool dressing *(appareil ouaté)*.

Otitis.—The same danger threatens in acute otitis as in ophthalmia, that is to say, the inflammation may extend to the brain, and more especially in this complaint, to the cerebellum.

Should the above take place, certain disturbances in the co-ordination of the movements, and a nausea similar to sea-sickness will be observed, as was ascertained by Flourens, when he destroyed the semi-circular canals in pigeons.

Acute otitis causes intolerable pains, as though a hot iron were being forced into the ear. This inflammation ought therefore to be combated energetically. The treatment is similar to that for acute ophthalmia.

Pituititis.—In inflammation of the pituitary membrane, there is also danger of the inflammation extending to the brain, and its meninges. It may result from traumatic causes, such as pulling out the hairs or vibices. The engorgement of the nasal fossæ must be removed by the application of leeches, and fever combated by the defervescent and antiperiodic alkaloids.*

I have previously referred to exudative rhinitis or glanders.

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* Ferrier's snuff might prove useful as a topical remedy in pituititis, as well as in coryza, to relieve irritation. The following is the formula:—Nitrate of bismuth, 6 drams; hydrochlorate of morphia, 2 grains; powdered acacia, 2 drams. A pinch should be sniffed up into the nostrils *very frequently*.—H.A.A.

Stomatitis.—Simple stomatitis is easily treated ; it has not the same characters as exudative stomatitis (*vide* that disease), and the gangrenous variety (noma), which is observed especially in marshy countries. This kind must be combated by quinine, chiefly the arseniate, and by the application of muriated honey :—

A granule every hour, at the commencement of the disease, that is, when the lips and inner aspect of the cheeks assume a palish hue.

Stupor must be combated by arseniate of strychnine :—

A granule every hour, alternately with arseniate of quinine.

Glossitis.—This inflammation is most often caused by the abuse of mercury, and by certain poisons or virus. It must be combated by strychnine, and the arseniates, as in stomatitis. It is dangerous to make deep incisions in the tongue, on account of the hæmorrhage and prostration. In case of need, tracheotomy should be performed in order to prevent suffocation.

Locally, chlorate of potash and chloral gargles should be used.

Amygdalitis or Tonsillitis—This inflammation is only dangerous when it is due to miasmatic causes, which call for the employment of strychnine, and the arseniates. Drastic purgatives : senna, scammony, etc., are necessary here to cause a prompt cleansing of the mucous membrane. The following is useful for that purpose :—

Eau de Vienne, 60 grammes ; sulphate of magnesia, 15 grammes ; syrup of mint, 30 grammes.

Anginas.—I designate under this name those stridulous affections which menace suffocation, in consequence of spasm of the air-passages, and exudations or pseudo-membranes. These diseases are generally miasmatic, and consequently require the employment of strychnine and the arseniates. These medicaments must be vigorously pushed, and spasm should be combated by hyosciamine.* (Vide *Diphtherias.)*

Pleurisy.—Pneumonia.—These inflammations often proceed both together. They differ, however, according to whether the pleura or the lung is particularly affected.

In pleurisy, the pains are lancinating and pungent (pleuritic points). They must not be confounded with intercostal or pleurodynic pains, which are induced by the contraction of the intercostal muscles. Pleuritic pains are felt even apart from respiration, as when the patient tries to withhold his breathing. The pulse is small and quick, and the face is shrunk and generally pale. Auscultation reveals crepitant and sibilant râles. The cough is dry, or at least followed by only slight expectoration; always serous. The disease begins with a violent shivering. It is necessary, therefore, from the outset, to administer arseniate of strychnine, arseniate of quinine, and digitaline:—

A granule of each, together, every half-hour.

The chest must be dry-cupped, and immediately afterwards it must be rendered immoveable by means of a circular bandage; for it is important to prevent the movements of the thoracic walls, which exercise a painful friction on the inflamed pleura. As a drink, lemonade, with the addition of Seidlitz salt, should be given, in order to provoke an abundant exudation through the digestive and urinary mucous membranes.

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* As an adjuvant to the dosimetric treatment of the various inflammatory affections of the throat, ear, etc., I would strongly recommend the application of Leiter's temperature regulator, by means of which cold may be continuously applied to any region. In tonsillitis, inflammation of the fauces, enlarged thyroid gland, laryngitis, diphtheria, acute inflammation of the mastoid process, and suppurative catarrh of the middle ear, great benefit has been derived from the use of the above apparatus, by Dr. Lennox Brown, Senior Surgeon to the Central London Throat and Ear Hospital. Professor Politzer, of Vienna, is of opinion that "local bleeding, or Wilde's incision" may be avoided in acute inflammation of the mastoid process, by abstracting heat by means of the temperature regulator. The same holds good no doubt (avoidance of bleeding) for inflammations in most regions of the body. Uniform heat may be applied equally well with the apparatus, if required. For a description of the regulator, *vide* article by Dr. Lennox Brown, in the "Specialist," December, 1881. Messrs. Krohne and Sesemann, 8, Duke Street, Manchester Square, London, are agents in this country for the apparatus. It may be obtained in a variety of forms suitable for application to every region of the body. It is also cheap, so that it may easily come into general use.—H.A.A.

This treatment has particularly in view the prevention of effusion into the pleura, which generally takes place at an early period of the disease.

The reaction having come on, it must be combated by aconitine and veratrine :—

A granule of each, together, every quarter-of-an-hour, until the pulse and temperature fall.

In pneumonia, the patient experiences a feeling of ebullition in the chest, with great oppression and impediment to the lung circulation ; the face is injected and swollen ; the expectoration is frothy and sanguinolent ; the pulse is hard ; and the respiratory murmurs are absent, though occasionally there may be bronchial râles ; dulness on percussion.

It is obvious that the expression of the disease is different from that of pleurisy, and that it is needful to succour the patient by disembarrassing his lungs by bleeding. Nevertheless, arseniate of strychnine, arseniate of quinine and digitaline, must also be given, in order to favour the return of the lung to its normal state, and to prevent infiltration or pulmonary œdema :—

A granule of each, every half-hour until sedation. As a drink, lemonade, with Seidlitz salt.

The re-action should be combated by aconitine and veratrine, as in pleurisy. Narcotics must be abstained from as much as possible. To relieve the cough and facilitate expectoration, a kermes potion should be given. Recourse might also be had to scillitine :—

A granule every half-hour, with almond emulsion.

Broncho-pneumonia must be treated in the same manner. The result of this treatment will be to prevent the anatomo-pathologic lesions, against which art is so often powerless. Besides, it is founded also on the progress of the disease. Bouilland pretended to jugulate acute diseases of the chest by consecutive bleedings; such treatment can be comprehended when the patients are vigorous, and of sanguine temperament; but bleeding does not modify in the least the vitality of the lung (the suffering organ), and by the void which it produces, forms a species of gulf, into which all the blood in the body endeavours to precipitate itself. It is therefore more rational to contract the pulmonary tissue by the arseniates; in this manner, if bleedings are necessary—being required when respiration is difficult—they might be less copious, and less frequent.

The counter-stimulant treatment by tartar emetic, I do not pretend to reject, but I think that, in the greater number of cases, it would be better to make use of the defervescent alkaloids.

I will say nothing concerning the treatment by alcohol, except that it can only be expedient in countries where there is an abuse of alcoholic liquors.* But, even then, the employment of arseniate of strychnine, arseniate of quinine, digitaline, etc., cannot be dispensed with.

I ought here to say a word concerning capillary thoracocentesis, or pneumatic aspiration. Notwithstanding the energy with which pleurisy is combated, it often happens that effusion takes place, which requires a prompt evacuation, under penalty of seeing the patient perish by suffocation. It is in such cases that capillary thoracocentesis becomes a sheet-anchor. Even in doubtful cases, it should be performed, because it cannot in any manner aggravate the situation. Dulness, bruit de souffle, ægophonia, or bronchophonia are often wanting, or when present, may be insufficient signs for indicating the extent of effusion. Enlargement or bulging of the affected side, is also an insufficient sign. But there can be no doubt that the patient is being suffocated, and that it is imperative to render him immediate aid. The aspiratory needle must be plunged into the chest-wall, at the dull and projecting point, and the absence of resistance will indicate its arrival in the fluid. If, however, the effusion is not there, the operation must be repeated at an adjoining point, until the liquid is discovered and drawn out by the aspirator.

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* For an account of the alcoholic treatment of pneumonia, *vide* Todd's "*Clinical* Lectures."—H.A.A.

Pericarditis.—Carditis.—Endocarditis.—Inflammation of the heart and its membranes is characterised by pungent pains of a stabbing nature, and by disturbances in the circulatory and respiratory rhythms. New-leather-like, blowing, rasping and sawing sounds are heard on auscultation. The disease commences with shivering and leipothymy, which proves that the organ has been suddenly surprised, and that it is needful to aid it by arseniate of strychnine and digitaline—

A granule of each, together, every half-hour.

The English physician, Cullen, called digitalis the opium of the heart; but as opium stupefies the brain, digitalis, in like manner, stupefies the heart. It is necessary, therefore, to associate digitaline with the arseniates. It is evident that the movements of the heart have been suddenly disturbed, and that distension of its walls has been the consequence. Tone must, therefore, be given to the organ, in order that it may return to its normal condition, and it must not be weakened by improper blood-lettings. A void has been produced, which the abstraction of blood prevents filling up. Thence, disturbances of circulation and respiration. The physician, however, must be on his guard against the re-action, and the moment it passes beyond a certain point, it must be moderated by aconitine and veratrine:—

A granule of each, together, every half-hour, until the pulse and temperature fall.

In pericarditis, what have to be most feared are false membranes and effusions. The former are deposited on the two serous plates and prevent their free working; thence, the rubbing, crackling, leathery, rasping and sawing sounds, of which I have previously spoken. The fluidity of the blood must therefore be maintained by the alkalines, such as arseniate of soda, which is here indicated as soon as the fever has been overcome by the defervescent alkaloids:—

Arseniate of soda, a granule every hour.

Its action must be promoted by a saline mineral water, of which one or two glassfuls must be given every morning. In case of need Seidlitz salt may be administered instead:—

A teaspoonful dissolved in a tumbler of fresh water, every morning.

Hydropericardium being connected with a condition of anæmia, it must be prevented by the administration of arseniate of iron:—

Four to six granules a-day.

But if it is perceived from the increasing embarrassment of the circulation and respiration, the feebleness of the pulse, and the curving of the cardiac region, that effusion has taken place, without a moment's delay cardiac thoracocentesis must be performed by penetrating the pericardium between the fifth and sixth left ribs, at the point where the cartilages commence, so as to avoid the internal mammary artery. There is no danger in performing this operation, whilst it is most dangerous to allow the effusion to remain. Immediately after the effusion has been removed from the pericardium, the diuretic alkaloids must be given, such as digitaline, colchicine, scillitine, which must be aided by ferruginous preparations, especially Chanteaud's saccharine soluble oxide of iron, because it agrees perfectly with alimentation.

In carditis, the pulse is rather slackened than accelerated, and there is a tendency to cyanosis, syncope, and coldness. *It is* obvious that in this case digitaline would do harm; how much more, digitalis in substance. It is necessary, therefore, at first, to have recourse to arseniate of strychnine:—

A granule every half-hour, until the heart is relieved and tonified.

A cordial draught may also be occasionally given.

Carditis is generally due either to rheumatism, gout, alcoholism, or to the abuse of opiates. The arseniates are indicated in these different cases, and arseniate of antimony in preference:—

A granule every half-hour.

In endocarditis, the pulse is generally accelerated, and slackening only takes place when the inflammation has seized upon the muscular tissue. In this case digitaline must be associated with arseniate of strychnine:—

A granule of each, every half-hour.

It is necessary to be sparing in the use of narcotics, and not to yield to the desire of the patient to sleep, because that would expose him to startings up out of sleep, with an agitation of the heart which might prove mortal. Sleep will come naturally when the organ has been fortified by the arseniates.

Peritonitis.—Peritonitis is general or partial. General peritonitis is characterised by great prostration: the attitude of the patient is peculiar—he lies upon his back, the legs being drawn up towards the pelvis, so as to relax the abdominal wall. The face is pinched, the pulse thread-like, and the skin cold. The abdomen is distended, especially towards the umbilicus. There is hiccough, and greenish matters are vomited. Taking the whole of these symptoms into consideration, it will be manifest that it is necessary to have recourse to the nervines: phosphoric acid and sulphate of strychnine:—

A granule of each every half-hour, until the peripheral heat is restored.

If the shiverings persist, hydroferrocyanate of quinine must be given, which is here the composer *par excellence*:—

A granule every half-hour.

As soon as reaction shall occur, the morbid heat tending to rise beyond 38°c., and the pulse above 100, veratrine must be given, as indicated by the following Table:—

Dosimetric employment of Veratrine in Puerperal Peritonitis.

Age 27.—Multipara.—Normal accouchement.

(Observation communicated by Dr. Deneffe, Professor at the Faculty of Medicine of the University of Ghent.)

DATES.	Time of Administration of the Doses.	Time of Observation	EFFECTS.
June 5		8 a.m.	General malaise. Shiverings, followed by reaction. Pulse, 90; temperature, 38 3-5°c. Slight meteorism; abdomen rather tender. Rest, dieting, refreshing drinks. Camomile oil embrocations.
.. ..		6 p.m.	No amelioration. Pulse, 100. Breasts reduced; ventral meteorism; embarrassed respiration; prostration more marked. Counter-stimulant mixture of digitalis and tartar emetic: one spoonful every hour.
June 6		8 a.m.	Disturbed night, insomnia, abdomen painfully distended, respiration more difficult, breasts flabby, lochia rare and fetid. Pulse, 110; temperature, 40°c.; face pinched. Continuation of the counter-stimulant mixture, increasing the digitalis from 3 to 6 grammes; blister over the hypogastrium.
.. ..		6.0 p.m.	Pulse, 117; abdomen tight, apparently less painful; greenish vomitings; hiccough at intervals.
June 7	From 10.0 a.m. to 11.0 p.m., 1 milligr. of veratrine every hour.	11.0 p.m.	Pulse, 100; heat of the skin less pungent, less thirst, abdomen less tight, hiccough disappeared, still some vomitings.
June 8	From 11.0 a.m. to 10.0 p.m., 1 milligr. of veratrine every hour.	11.0 p.m.	Pulse, 80; skin moist; abdomen distended, but much less painful; the vomitings and hiccough have ceased.
June 9	From 12.0 noon to 8.0 p.m., 1 milligr. of veratrine every hour.	8.0 a.m.	Pulse, 80; abdomen supple, not painful; hiccough and vomitings have not returned.
June 10			Medication suspended. The amelioration progresses.

It is seen from the above Table that the amelioration commenced with the administration of veratrine.—The counter-stimulant mixture only increased the general prostration; it would have been better to prescribe the nervines and hydroferrocyanate of quinine, as the following Table conclusively proves :—

Dosimetric Employment of Digitaline and Hydroferrocyanate of Quinine in partial Peritonitis.

Age 35.—Violent contusion of the epigastrium.—Hæmatemesis.

DAYS.	DOSES.	Time of Observation.	EFFECTS.
1st day,		5.0 p.m.	Paleness ; general chilliness ; small pulse, scarcely perceptible ; epigastrium distended and dull ; vomiting of blackish blood.
2nd day,		8.0 a.m.	The re-action has not taken place. Epigastrium not very sensitive, dull.
.. ..		8.0 p.m.	Epigastrium tight and sensitive ; scarified cupping, cataplasms.
3rd day,	1 milligr. digitaline every hour (10 milligr.)	8.0 a.m.	General re-action. Pulse, 90 ; temperature, 35 2-5°C.
.. ..		8.0 p.m.	Epigastrium less tight and less painful ; temperature nearly normal.
4th day,	Same prescription.	8.0 a.m.	The amelioration is maintained.
.. ..		8.0 p.m.	Hardly any fever.
5th day,	8 milligr. digitaline, 1 every hour	8.0 p.m.	Amelioration continues.
6th day,	6 milligr. digitaline.	8.0 a.m.	Same condition.
.. ..		8.0 p.m.	Same condition.
7th day,		8.0 a.m.	Febrile re-action. Pulse, 98 ; temperature, 37 3-5°C. Leeches, cataplasms.
.. ..		8.0 p.m.	Same state.
8th day,	10 granules of hydroferrocyanate of quinine (0.01), 1 *granule every half-hour.*		During the day, the fever and the peritonitic symptoms abate.
.. ..		Evening.	The fever has almost entirely disappeared.
9th day,	No medicine.	Evening.	Slight febrile accession, with return of pain.
10th day,	10 granules hydroferrocyanate.	Evening.	Fever abated.
11th day,	6 granules.	Evening.	Apyrexia.
12th day,	4 granules.	Evening.	Fever has ceased.

This Table enables me to offer some observations:—In inflammations from nervous paralysis, the temperature does not rise so rapidly as in frank inflammations, and it does not correspond with the state of the pulse; thus the latter was at 90, when the former was but $35\frac{2}{5}$°c., consequently below the physiological mean. This circumstance proves how necessary it is to insist upon the administration of the nervines.

It is also seen how quickly the fever yielded to hydroferrocyanate of quinine; and how it showed a tendency to return as soon as the remedy was suspended. It is advisable, therefore, to continue it for some days after the fever has disappeared.

Puerperal peritonitis or metro-peritonitis is without doubt the most terrible of all inflammations, because it is complicated with an infectious element, or the *lochine*, which causes a veritable septicæmia; therefore antiseptic medicaments should be employed in this case; and none could be better than the arseniate of iron, which might be pushed in pretty large doses: from ten to twenty granules a-day, proceeding gradually.

The combination of arsenious acid with the iron prevents all fear of poisoning. Thus, therefore, in metro-peritonitis, independently of the nervines at the commencement: phosphoric acid and sulphate of strychnine; of veratrine in the period of reaction; of hydroferrocyanate of quinine in the period of accession; arseniate of iron must be employed against the septicæmia, characterised by the discharge of fetid lochia, clammy perspiration, sharp and very rapid pulse (120), high temperature (40° to 41°c.), delirium, convulsive twitchings of the tendons and difficulty of breathing; in short, all those symptoms announcing a decomposition of the blood:—

Arseniate of iron, a granule every half-hour.

It is the more necessary to maintain the plasticity of the blood because metro-peritonitis often gives rise to serous suffusions and to albuminuria, which explain the eclampsia *peculiar* to this inflammation.

Hepatitis.—Inflammation of the covering of the liver, or peri-hepatitis, must be distinguished from that of the parenchyma. In the former, the serous membrane is attacked, and the same treatment is demanded as in peritonitis. (*Vide* the latter.)

In inflammation of the parenchyma there is cholæmia, the bile elements being retained in the blood. Thence, a feeling of malaise, pungent heat of the skin, keen thirst, sometimes vomitings, and all the signs of a decomposition of the blood, the bile acting like a real poison, on account of its alkaline nature. It results from the above pathological condition that, independently of general antiphlogistics, baths, cataplasms, leeches, etc., recourse must be had to evacuants and antispasmodics, notably hyosciamine and arseniate of cafeine, in order to re-establish the flow of the bile :—

A granule of each, together, every hour.

The Seidlitz salt must be given to refresh the intestinal tract.

Hepatitis, in hot countries, often terminates in abscess of the liver, with bilious-purulent reabsorption. Recourse must therefore be had to pneumatic aspiration, as soon as fluctuation appears. The English in India are more liable to attacks of hepatitis than the natives, on account of their heating diet and burning medicaments. It would be desirable that dosimetry should penetrate into that country ; unhappily the tenacity of the English to preserve established usages is well known.* In South America, where the miasmatic bilious fevers prevail, dosimetry has been welcomed with great favour, because its advantages have been understood, and it has been seen to be more rational, especially in comparison with the intricacies of the old pharmacy.

Splenitis.—In splenitis, as in hepatitis, the state of the blood must be especially considered. The red globules of the blood accumulating in the spleen, render it friable and pultaceous. Thence, therefore, arise venous congestions of the side of the stomach, causing hæmatemesis. (*Vide* this latter.)

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* Dr. Vurdapah Naidu, of the Madras General Hospital, has recently advised all native practitioners to employ the dosimetric medicaments in the treatment of the fevers peculiar to India.—H.A.A.

In this inflammation the spleen must be emptied by arseniate of strychnine, which will also have the effect of preventing alteration of the blood :—

A granule every hour.

Splenitis, like hepatitis, may terminate in apostemation. In this case it is necessary to perform pneumatic aspiration, in order to prevent disorganization of the spleen. Generally, the physician may be reproached with want of boldness ; it is true that he is held back by professional responsibility. However, the autopsy ought to prompt to more than useless regrets.

Gastro-enteritis.—It is known that Broussais wished to make gastro-enteritis, and its extension to the other abdominal viscera, as well as to the brain and the meninges (gastro-entero-hepato-meningo-encephalitis), the foundation of medicine. Thus he confounded the cause and the effect, by placing in the same class the ataxic adynamic fevers and the visceral inflammations which are the consequence of them. I have previously discussed those fevers, and the treatment which they require. I shall therefore only occupy myself here with the idiopathic inflammations, due to local causes.

Gastritis.—It is necessary here to distinguish the different membranes which may be the seat of inflammation. Thus, when the pain is violent, increasing at the least touch, with pinched face, hiccough and greenish vomitings, it is a localized peritonitis which has to be dealt with, and it must be treated in the same manner as general peritonitis.

When it is the mucous membrane which is inflamed, there is the *burning* sensation which extends to the throat. The tongue is small and red at the edges. The stomach should be kept at rest, and if the pain, or rather the epigastric sensibility persists, it must be relieved by leeches.—Liquid diet (milk with lime-water, weak mutton or chicken-broth, etc.), emollient *drinks.*

Cramp-like pains point to the sub-mucous layer as the part attacked; it is properly called gastrodynia, and should be treated as such.

As to gastritis of typhoid character, it is known that to the illustrious author of "Physiological Medicine," adynamia and ataxia were signs of local inflammation. What is certain, is that with his burning medicaments, Brown did but increase the irritation of the stomach. Having at his disposal only fixed or diffusible stimulants, such as cinchona and Virginian serpentaria, the typhoid state, characterised by fuliginosities of the tongue and lips, sub-delirium or coma-vigil, carphology, etc., was only exasperated, and excessive azotization of the humours or the ataxic state due to the production of carbonate of ammonia, was seen to arise. (Vide *Typhus.*)

Since polypharmacy, or the mania for drugs, has been held less in favour, real or idiopathic gastritis has singularly diminished. No one now cares to risk the conversion of a simple derangement of the stomach into gastritis*, since drastic purgatives are more sparingly used, although pompous advertisements are continually tempting poor dupes to buy them. Physicians ought to warn their patients against this quackery, which assumes all forms, in order to insinuate itself into the confidence of the public.

Enteritis.—The distinction between inflammations of different portions of the intestine is based especially upon their functions, their degree of vitality, and their relations to the neighbouring organs.

Duodenitis.—Duodenitis is accompanied with bilious symptoms, on account of the hepatic duct. Pancreatitic symptoms are less well marked, unless the fatty or lactescent diarrhœa remarked in this case be included as such. The pain is dull and deep, the descending and transverse portions of the duodenum having only a partial serous covering. This pain is increased by pressure over the liver. The jaundice which declares itself in the course of this inflammation is owing to the extension of the duodenitis to the liver. (Vide *Hepatitis.*)

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* I knew a highly respected and clever medical practitioner who died from acute gastritis, produced by his habit of taking large doses of calomel (10 grains) whenever he got out of order. He believed, according to the erroneous doctrine of his day, that calomel was a remedy for most diseases.—H.A.A.

The treatment consists principally in causing the bile to flow into the intestine by means of quassine, and by washing the intestinal tract by the Seidlitz salt; this is so much the more necessary as the transverse colon is in direct relation with the duodenum. Diet and emollients will do the rest.

Jejunitis.—Ileitis.—The jejunum and ileum having a peritoneal covering, present when inflamed symptoms of partial peritonitis, characterised by pungent pains, irradiating about the umbilicus, but deeper seated than those of parietal peritonitis. The colics also observed in these cases, may assume the character of internal strangulation or *miserere.* These must be combated by hyosciamine with oils:—

A granule every half-hour, with a dessert-spoonful of olive oil, either pure or mixed into an emulsion with the yolk of egg.

Typhoid fever localizes itself in the jejunum and ileum by hypertrophy and ulceration of the glands of Peyer and Brunner; therefore the cleansing of the intestine by Seidlitz salt must be insisted upon.

Typhlitis.—Inflammation of the cœcum is characterised by a deep pain in the right iliac fossa. Here again it is necessary to distinguish peritoneal typhlitis or perityphlitis, which often extends to the surrounding cellular tissue, and gives rise to an abscess which may extend in a variety of directions, opening either into the bladder, rectum, or the inguinal canal. Typhlitis often declares itself during the course of typhoid fever. Independently of external antiphlogistics, leeches, cataplasms, etc., stagnation of the fecal matters must be prevented by cleansing the intestine with Seidlitz salt.

Colitis.—The position of the ascending and descending portions of the colon causes this inflammation to be felt deep in the loins, where it might be confounded with psoitis, more especially, as it is increased by straightening the trunk; however, the abdominal swelling and the rumblings in the bowels indicate functional derangement of the large intestine. In such cases, emollient enemata must be especially insisted upon. If constrictions are present, recourse must be had to hyosciamine and oils, as in enteritis.

The sigmoid flexure of the colon being undulatory and having a peritoneal covering, the pains arising from its inflammation are sometimes very acute. The treatment is similar to that of partial peritonitis.

Rectitis.—This inflammation is characterised by a sensation of heat within the pelvis, and tenesmus of the anus. It must be combated by leeches and emollient enemata, but especially by veratrine and hyosciamine:—

A granule of each, together, every hour.

Nephritis.—Renal inflammation is characterised by pains of a colicky kind, irradiating along the plexuses of the great sympathetic, and causing retraction of the testicle in man, and ovarian pain in the woman. The urine is scanty, red, and sometimes mixed with blood. Here spasm must be combated by hyosciamine, and the urinary secretion re-established by digitaline:—

A granule of each, together, every half-hour.

The cleansing of the intestine by Seidlitz salt is so much the more necessary, as the accumulation of fecal matters in the colon augments the renal pain. It may be noted that turpentine vapour baths are sometimes useful, on account of their influence over the urine. When there is abundance of uric acid, recourse must be had to benzoic acid:—

A granule every quarter-of-an-hour.

The fever of nephritis in its continued form should be combated by veratrine:—

A granule every half-hour,

and in its paroxysmal form, by hydroferrocyanate of quinine:—

A granule every half-hour.

Cystitis.—In cystitis, the condition of the urine and mucus must be particularly noticed. There is in reality, in this disease, a double source of irritation, alkalinity on the one hand, and acidity on the other : uric acid in the urine, and chlorides in the mucus. The intestine must therefore be cleansed by Seidlitz salt, and digitaline and benzoic acid administered :—

A granule of each, together, every half-hour.

Tenesmus, which is often very distressing, must be calmed by hyosciamine :—

A granule every half-hour, with the granules of digitaline and benzoic acid.

If fever is intense, it should be reduced by the administration of aconitine and veratrine : —

A granule of each, together, every half-hour.

Should the fever be paroxysmal, hydroferrocyanate of quinine must be given : —

A granule every half-hour, until the paroxysm has ceased.

I ought here to say a word concerning cystitis arising from urethral strictures, in which dosimetric medicine can render very great services. It is seldom, indeed, that retention of urine depends exclusively upon obliteration of the urethral canal. The phenomena observed, are, on the one part, spasm of the neck of the bladder, and on the other, paralysis of the body of that viscus. Before having recourse to forcible catheterism, it is better to remove the above vital causes by means of cicutine, hyosciamine, and strychnine :—

A granule of each, together, every half-hour, until the spasm ceases, and the urine flows.

Metritis.—I have already treated the subject of metro-peritonitis. What I have to say concerning metritis amounts to but little, because the uterus, apart from the gravid state, has little sensibility. The organ sleeps.

The proverb: *Mulier est quod est propter uterum,* refers rather to the ovaries, which truly constitute feminity as the testicles do virility. The uterus has a compact tissue, almost similar to leather, which, apart from pregnancy, is not easily engorged.

I will, however, notice metritis arising from external causes, as when it follows operations performed on the womb, and which may be the occasion of very grave symptoms, and of harrowing, keen, and continuous pains, extending to the sacrum and the loins, with burning fever. These accidents must be combated by baths, cicutine, and hyosciamine :—

A granule of each, together, every half-hour;

and when paroxysmal, by hydroferrocyanate of quinine :—

A granule every half-hour.

CHRONIC AND DIATHESIC DISEASES.

Chronic diseases are due to a morbid cause, arising either from the organism itself, or from without. They are, in general, *diatheses*, that is to say, vices of nutrition.

The word *vice* does not exclude vitality. It is, indeed, in consequence of a want of vital resistance that the majority of morbid causes act upon us. Therefore dosimetry makes it a constant law to increase vitality instead of diminishing it.

The word *diathesis* is of itself very vague, since it implies only a disposition of body, or a tendency to certain diseases; but this disposition has an organic cause, which must be sought for first of all, in order that the *predominant* treatment may be applied.

I may just state, that the causes of diatheses exist either within or without us.

INTERNAL DIATHESES.

Internal diatheses are inseparable from the organism itself, and its functional activity.

In the physiological state, there is a perfect equilibrium between composition and decomposition: the waste balances the repair; so that there is no surplus either on the one side or on the other. At the same time that the materials of nutrition are located, those of decomposition are eliminated, or undergo a new elaboration. Thus, the red globules of the blood having been decomposed in the spleen, their cruor elements carried to the liver, serve there for the elaboration of new globules. Nature has taken this wise precaution, so as not to increase excessively the work of re-composition. It is a new construction, into which she has caused old materials *to enter*.

There is a deficiency of the equilibrium of the two movements of composition and decomposition in all diatheses from internal causes. To re-establish, therefore, this equilibrium, is what the physician ought to aim at. Medicine thus loses those humoral and iatro-chemical fancies which it introduced, and comes back to the first cause, that is to say, to *life*.

Plethoric Diathesis.—Properly speaking, this diathesis does not constitute a morbid state. It is, on the contrary, an excess of health; but which, when it proceeds to plethora, may give rise to very grave and even mortal consequences.

Plethora should be looked upon as an excessive plasticity of the blood; in other words, as an excess of nutrition. It must, therefore, be combated by diluents and refrigerants, principally by the regular use of the Seidlitz salt. As to local congestions, they must be dissipated by blood-lettings, performed at proper times and in appropriate localities. (Vide *Congestions.*)

The plethoric diathesis gives rise to inflammatory diseases, which then are produced by the least exciting cause, so as to appear spontaneous. This inflammatory susceptibility should be corrected by the employment of the defervescent alkaloids, such as aconitine, veratrine, and quinine. Therefore every febrile disturbance ought to be repressed by aconitine :—

A granule every hour, until the congestive effort has abated.

It is in this prophylaxis that the physician's art especially consists, and not in weakening the economy by bleeding and dieting.

Hæmorrhoidal Diathesis.—As in the plethoric diathesis, the blood is ruddy and plastic, so in the hæmorrhoidal diathesis it is of dark colour, and almost pitchy. The red globules not being renewed promptly, are no longer oxygenated, so that the hæmoglobin, instead of disengaging carbonic acid, evolves, on the contrary, carbonic oxide. It is in this venous condition of the blood, that the hæmorrhoidal diathesis consists. I may be permitted here to enter into some explanations.

The oxygen brought by the respiration under the influence of the atmospheric pressure, passes through the walls of the capillary vessels, and is disposed of by the hæmoglobin of the blood corpuscles. An oxide of hæmoglobin is thus formed, to which the corpuscles owe their ruddiness.

In poisoning by carbonic oxide, the latter is disposed of by the blood-globules, and combines with the hæmoglobin, to the point of preventing the globules from absorbing fresh oxygen, so that the individual dies from asphyxia.* The same happens, in a less degree, to those persons of a hæmorrhoidal constitution; therefore it is necessary, by all the means in our power, to stir up their blood, so as to hasten its decarbonisation.

Among these means must be reckoned, in the first place, the Seidlitz salt, which will have the effect of rendering the blood more penetrating, and more eager for oxygen. Afterwards, the arseniates should be given, which also will promote the vivification of the blood. On the table-lands, where the air is rarefied, and the barometrical pressure less, the people who inhabit those heights are obliged to take arsenic, in order to prevent pulmonary congestions.

The hæmorrhoidal state predisposes to passive congestions; hence, the bluish state of the apparent tissues, and the general sluggishness. Those individuals should take Seidlitz salt every morning, and in the evening two granules of arseniate of strychnine, so as to revive the tonicity of the vessels, and increase the ruddiness of the blood. Such persons being predisposed to algid or apoplectiform fevers, must combat the latter by the arseniate of quinine. (Vide *Algid fevers.*)

Splenic Diathesis.—As I have previously said, it is now generally admitted that the red globules of the blood which have already circulated, and which have therefore become useless, and consequently are no longer able to renew their oxygen, are destroyed in the spleen—like old iron re-melted in the furnace—and the colouring matter or hæmoglobin is carried to the liver to serve for the formation of new globules. When this destruction has not taken place, or at least is insufficient, there is splenic diathesis, in other words, the spleen is engorged, and the engorgement is transmitted by degrees to the entire portal system; it is this which made the ancients say: "*Vena portarum, porta malorum.*" It is necessary in these engorgements to give arseniate of iron, arseniate of strychnine, and arseniate of soda:—

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* The blood and muscles of persons and animals poisoned by carbonic oxide are brightened in colour, but in poisoning by carbonic acid, they are darkened. (Vide Taylor's *Manual of Medical Jurisprudence;* article, "*Carbonic* Oxide.")—H.A.A.

A granule of each, together, three to four times a day;

and in the morning, the Seidlitz salt:—

One teaspoonful in a glass of water.

I have already indicated the symptoms of abdominal congestions, and I refer my readers to them.

Obesic Diathesis.—This diathesis is met with especially among literary men, whose intellectual life militates against their animal life: the arteries are very small, and the extremities are plump, therefore congestions are not so much to be feared, but rather stasis of the blood. It is especially in the liver that these derangements are produced; therefore such persons are liable to dropsies, more especially as life in the study ends by inducing chloro-anæmia. Obese individuals should, therefore, compel themselves to take plenty of exercise, and should keep the bowels free by the use of the Seidlitz salt. Every evening, they should take two granules of arseniate of strychnine, so as to bring all the functions into activity. By following the above regimen, great intellects may devote themselves with impunity to their literary labours.

Chloro-anæmic Diathesis.—This diathesis is characterised by breathlessness and pallid complexion, due to the predominance of the white globules, or rather to their non-transformation into red globules. I will here briefly refer to the teachings of physiology concerning the genesis of these globules.

Origin of the White Globules.—These globules, in their anatomical characters, are on the whole similar to embryonic cells. Their form is globular, and they are composed of an enveloping membrane and a contained liquid, in the midst of which a round nucleus is seen, enclosing within itself a nucleolus. These globules constitute independent organisms: as such, they perform in the midst of the liquid which contains them, certain movements, and can, under certain influences, modify their globular form.*

The white globules are found in the lymph, the chyle, and the blood. The elements of the chyle are composed almost exclusively of them. In the lymph, they are mixed with some red globules. They exist in much smaller quantity in the blood, in which the red globules predominate. In this latter fluid, 350 red globules are found to one white globule.

The white globules, in the first period of fœtal life, are derived from the intestinal spheres of the egg. Later on, others are formed in the primitive branches of the chyliferous and lymphatic vessels; probably at the expense of the elementary granulations which are there met with. They are also formed in certain parenchymatous organs, such as the lymphatic ganglia, the suprarenal capsules and the thyroid body. This latter opinion is based on the fact, that in the blood which proceeds from a parenchymatous organ, white corpuscles are found in a much more considerable quantity than in that which enters it. Observations on this subject have been made, particularly in the liver. The phenomenon presents the greatest intensity in that organ during digestion.

Relying upon structural anatomy, it has been supposed that other parenchymatous organs ought to play the same part with respect to the white globules. The spleen, however, is an exception to the rule.

From microscopic observations made on rabbits and frogs, it would appear that white corpuscles are also formed in the marrow of the bones, from whence they would pass into the capillary system of the medullary membrane.

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* For interesting information concerning these corpuscles and their *relations*, vide *Evolution of Man*, by Ernst Haeckel.—H.A.A.

The above are the opinions most generally admitted concerning the origin of the white globules of the blood. As to their physiological *rôle*, they are destined to be transformed into red globules.

Red Globules.—I have pointed out that a few only of these globules are met with in the lymph, but that, on the contrary, they exist in considerable quantity in the blood, and more abundantly in the arterial than in the venous blood. They are in the form of flattened discs, with a depression in the centre. They are also cells, each having a membranous envelope, and brownish contents. They have neither nuclei nor nucleoli. The general opinion is that they are derived from the white globules, and that this transformation takes place especially in certain parenchymatous organs, in which the white globules are formed at the same time. (Vide *above*.)

This opinion is founded especially upon the microscopic observations of Kœliker. In examining certain parts of a frog, Kœliker states that he saw white globules transforming themselves into red globules in the interior of the lymphatic ganglia. In the batrachians, these ganglia more readily form plexuses, in which the lymph can be plainly seen passing into the blood-vessels. The transparency of the tissues permits the eye, aided by the microscope, to follow the metamorphosis of the white globules into red ones. Kœliker also relates having seen the white globules lose their nuclei by absorption, become flattened in the centre, and assume the characteristics of red globules in every respect.

According to the fact just cited concerning the origin of the white globules in the red marrow of the bones, an analogous transformation would there take place. The white globules, after having penetrated into the interior of the capillaries (always according to Kœliker), would undergo at first a change of colour: being uncoloured, they would acquire a dark colour, then their nuclei would be disintegrated, and they would undergo a flattening by the withdrawal of their central parts, in order thus to constitute perfect red globules.

Physiological Rôle of the Red Globules of the Blood.—It is now well understood that these globules play an important part in the act of respiration, by fixing in great part the oxygen of the inspired air, and transporting it through the different tissues, to perform the chemical processes of calorification and nutrition.

I must mention again a rather recent opinion concerning the intervention of the red globules in the formation of the colouring matter of the bile. Their *rôle* would accordingly be pretty complicated; it would relate to the property the spleen has of destroying the red globules under certain circumstances. Thus, if the blood is deficient in red globules, the spleen does not obviously retain any of them; if, on the contrary, these globules are there in excess, the spleen retains a good part of them, but only to utilise them otherwise; the globules are there destroyed, and yield their colouring matter to the albumen of the blood, which transports this matter to the liver by the portal vein, where it would be transformed into cholepyrrhin, biliphein, etc. This opinion has, however, especially as regards the latter portion, only the value of a hypothesis, which might be experimentally proved; it is, therefore, worthy of being here alluded to.

As to the other functions of the red globules, such as that of penetrating to the interiors of the organs, and becoming a constituent part of them; and that of forming in their interiors urea and the extractive matters of the blood; they are not generally admitted, and require further examination.

Anatomical Elements of the Blood in the Pathological State.—As I have previously remarked, in the physiological state the number of white globules of the blood is to that of the red globules as 1 to 350. Through the action of certain diseases, this proportion may change, and the number of white globules become then greater than that of the red globules, the latter having undergone a notable diminution. This phenomenon is observed in leucocythæmia.

The accumulation of white globules in the blood coincides with a hypertrophy of the lymphatic ganglia, which tends to strengthen the opinion that these globules are formed in those organs.

The study of certain affections has, moreover, permitted it to be proved, that besides their physiological functions, the white globules can accomplish others in the pathological state. Thus, in venous and arterial thrombosis, the white globules contribute in great part to the organization of the thrombus in the connective tissue. In suppuration, these globules also constitute a major portion of the globular elements of the pus. This latter opinion is based on direct observation. One of Virchow's pupils, Dr. Konheim, in the microscopic examination of the mesenteric membrane of a frog, saw formed in its interior, a purulent focus, in consequence of the accumulation of the white globules of the blood, which emerged directly from the vessels.

From the above outline of the present state of science concerning the white and red globules of the blood, and the parts performed by them in physiology and pathology, the physician may form an exact idea of the chloro-anæmic diathesis, and of the diseases to which it predisposes.

In the blood of the chlorotic, there is manifestly an insufficiency of red globules, coinciding with a depression of animal heat, and probably also of electricity. Physically, as well as vitally, the living body is an electrical machine. It is necessary that the battery be charged neither too much nor too little.

Chloro-anæmia happens in the latter case; therefore vital insufficiency is manifest in all the body-functions. The pulse is feeble and accelerated ; there are pantings, and palpitations of the heart on the least fatigue; the appetite is absent or immoderate; the digestion is slow, and more or less labor the blood is colourless, and wanting in plasticity; the m impressionability is very great, and nervous and inflamm diseases are very soon produced. If our young wome so lamentable a tribute to puerperal fever, that is, to peritonitis, it is because a large number of them are cl anæmic.

It may now be comprehended that the treatment of cl anæmia ought to be quite as much dietetic as therap Let us guard ourselves against cramming patients with medicaments, as is done in allopathy: neither must th submitted at first to an excessive regimen, but must be t with caution, by insensible gradations, to air, light nourishment. Let us do like the good gardener, who, a plant is sickly and blanched, does not expose it sudde the sun, but accustoms it gradually to it, and does not to it at first a heating manure, but a soft and light which finally, by a good succession of such, skilfully ma furnishes to it the necessary materials for its organic repar

At the same time, there are certain elements whic deficient in the blood of the chloro-anæmic: iron, for exa It must not be lost sight of, that iron is here necess restore the hæmoglobin, or the colouring matter of th globules. A few milligrammes of arseniate of iron suf re-establish their colour. That medicament must the be given as being the most active, and having a direct on the coloration and plasticity of the blood:—

Four to six granules a-day.

But as the reconstituents of the blood are not sufficient, the vital incitants, such as phosphoric aci arseniate of strychnine, are especially required:—

A granule of each, together, three times a-day.

Chloro-anæmic convulsions must be combated by c of zinc:—

Three to four granules daily, according to age.

Quite recently, phosphide of zinc has been extolled. Finally, in chloro-anæmia, congestions must be carefully watched, on account of the easy passage of the white globules into the connective tissue, and the organic disorders which may ensue in consequence. This leads me to speak of the tuberculous or phthisical diathesis.

Tuberculous or Phthisical Diathesis.—As tuberculosis transmits itself by heredity, and is almost constantly preceded by chloro-anæmia, it is but natural to seek for its source in the blood. This is how Hufeland characterises the precursory period of phthisis :—"The general signs of this period are, shortness of breath, produced by the least movement ; loss of breath on ascending stairs ; impossibility of retaining the respiration for a limited period, or of making deep inspirations; the patient is unable to run, to speak for any length of time, or to impose any exercise whatsoever upon the lungs, without finding it necessary to cough ; the hands are hot, the cheeks injected, especially after meals; the pulse is quick, and increased by the least excitement ; the tongue and lips are unusually red, and there is a predisposition to diseases, especially to those of the lungs."

In these symptoms, chloro-anæmia is recognised. It is indeed in the predisposition to tubercles or phthisis, that there is leucocythæmia or predominance of the white globules of the blood over the red globules.

I have just stated Konheim's theory, who makes the pathological products to be derived from the white globules. It is probable that it is the same with the tubercles, which, in origin, are cells. In phthisis, or commencing phthisis, the same means should therefore be employed as in chloro-anæmia, that is to say, the normal condition of the blood must be maintained by a saline regimen and by the arseniates. The saline and arsenical mineral waters, such as those of Bourboule (Auvergne), are very efficacious in these cases. The *Répertoire* of 1876 gives an instance of their beneficial action.

In confirmed phthisis, paroxysmal fever must be combated by the arseniate and hydroferrocyanate of quinine:—

Five to six granules a-day of each;

and the fever of consumption by arseniate of cafeine:—

Eight to ten granules a-day.

Narcotics must be administered but sparingly, because they hinder expectoration. Iodoform and codeine may, however, be successfully given:—

A granule of each, together, against the fits of coughing.

Lastly, the digestive powers must be sustained by quassine:—

Four granules daily, one half-an-hour before food.

Certainly it is not necessary to be optimistic; but on the other hand, it is not necessary to be pessimistic, to the degree of despairing of all cure. On the contrary, spontaneous cures have been witnessed, proving that phthisis may be cured by means of skilful treatment. I would, however, here suggest that it is the prophylaxis especially which should be established. Therefore I would advise that children born of phthisical or lymphatic parents, should be submitted early to a regimen of arseniated milk. A natural arseniated milk might be had by making the nurse or mother take granules of arseniate of antimony (ten daily). With this precaution, a phthisical mother might be allowed to nurse her child, at the same time intelligently paying regard to her physical forces. But it may generally be said that women who suckle their children are in the enjoyment of an excess of vitality, which causes a greater activity of all the functions.*

Scrofulous Diathesis.—Scrofula.—The scrofulous diathesis, or scrofula, is owing to an acescency of the humours, due to butyric and lactic acids. Hence occur tumefaction of the white tissues, glandular engorgements, softening of the bones and cartilages, and chronic abscesses. Such constitutions must, therefore, be strengthened by a saline regimen, and by residence at the sea-coast. Antiscrofulous iodized syrup should be given, adding thereto arseniate of strychnine, as a vital incitant:—

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* It must, however, be remembered that excessive or prolonged lactation, like "over-childbearing," will, sooner or later, exhaust the vital powers, and cause chloro-anæmia, phthisis, and other rapidly debilitating *diseases*.—H.A.A.

Three to four granules daily, one granule at a time, with a spoonful of iodized syrup.*

Goitrous Diathesis.—This diathesis is characterised by an abnormal development of the thyroid body; it is observed in deep valleys, as at the foot of the Alps, in the Cordilleras, and Andes; it appears to be owing to the absence of iodine in the water. What is certain is, that in submitting the goitrous to an iodized regimen, the thyroid body returns rapidly to its normal volume. The most suitable preparation in these cases is the iodide of arsenic:—

Four to six granules a-day.

At the same time, tincture of iodine must be painted over the enlarged gland.†

Cretinism is scrofulosis grafted on the goitrous diathesis: it is the lowest degree of human degradation, the race suffering from it being destined to extinction.

Uric or Gouty Diathesis.—This diathesis is due to a constitutional state, most often hereditary, and which is characterised by an excess of urea in the blood. The uric acid attacks the white tissues, tumefies them, and produces swelling of the articular extremities. Gout occurs at intervals, or in paroxysms, the intensity of which must be diminished by the alkalines, principally by the carbonate and benzoate of soda:—

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* The Syrupus Ferri Iodidi (strength of London Pharmacopœia), is a useful preparation. Dose: mxx to fʒj. The bromo-iodine waters of Woodhall Spa (Lincolnshire) are most valuable in all scrofulous affections. A residence of some weeks at Woodhall, with a graduated course of the waters, will often effect wonders in extremely obstinate cases. These waters are also beneficial in rheumatism, gout, syphilis, and many forms of dermatosis.—H.A.A.

† Dr. Edward Woakes has recently called attention to flouric acid, administered internally, in cases of *goître*. He speaks highly of that agent as a remedy.—H.A.A.

Ten to twelve granules a-day, when the urine is charged with a red sediment,

and by the daily use of Seidlitz salt.

Atonic gout (that is to say when it does not develop itself outwardly) must be combated by the arseniates of iron and soda:—

Five to six granules of each, daily.

The paroxysms of gout will be best mitigated by digitaline and colchicine:—

A granule of each, together, every hour, until the fever subsides.

If the paroxysms of fever show a tendency to nightly occurrence, hydroferrocyanate of quinine must be given:—

A granule every two hours, until cessation of the fever.

Rheumatic Diathesis.—This diathesis is due to the retention in the blood of the sweat principles, or sudoric acid; thence, the acesceny which characterises it, and the swelling of the fibrous tissues: the tendons and the neurilemes, and the neuralgic pains with which it is accompanied. The causal or *predominating* treatment, here consists, as in the gouty diathesis, in the employment of alkaline remedies, and the *variable*, in the use of the defervescents (aconitine, veratrine) and the antiperiodics (hydroferrocyanate and arseniate of quinine).

Fever should be combated with energy, on account of metastasis of the rheumatic principle to one of the chief organs. Tincture of iodine should be painted over all the parts menaced.

Glycosuric Diathesis.—This diathesis is characterised by an excess of sugar in the blood, and frequently its acidification, as proved by the secretions. The sugar is formed in the liver, and when it is not entirely burnt, is eliminated through the kidneys. However, all diabetics have not sugar in the urine. This substance, not being burnt, and being therefore retained in the tissues, occasions there the vague pains of which diabetics complain, and which are put to the account of rheumatism, although between these two affections there is an entire difference of origin, since the one is of a hydrocarbonated nature, and the other of an azotized nature. Diabetes mellitus ends in the production of marasmus and disorders in various organs. This diathesis must be combated by a saline regimen and by the arseniates of strychnine and of iron, in order to restore the blood to its normal condition:—

Three granules of each, together, daily.

The daily use of Seidlitz salt must be insisted upon.

Diabetes is often connected with a state of irritation of the spinal marrow and of the cerebral peduncles, as is observed in consequence of venereal excesses. In such cases, the employment of bromated camphor, with hyosciamine and cicutine, is indicated:—

A granule of each, together, morning and night.

Diabetics are very subject to erratic fever, which should be combated every time it appears by arseniate and hydroferrocyanate of quinine:—

A granule of each, together, every half-hour, during the whole duration of the accession.

Albuminuric Diathesis.—This diathesis is characterised by albumen in the urine, and is a great cause of debility. It is also often seen to supervene in cases of eclamptic convulsions, like those which occur during the puerperal period. The blood, deprived of its protein elements, becomes watery; hence, also, dropsy. The physician must, therefore, endeavour to restore to the blood its normal density, which may be brought about by a saline regimen, and to ward off anæmia by the arseniates (strychnine and iron):—

Three to four granules of each, together, daily.

An analeptic or fortifying regimen must be insisted upon.

Erratic fever, which is observed towards evening, will be combated by arseniate and hydroferrocyanate of quinine:—

A granule of each, together, every half-hour, until cessation of the fever.

Chyluric Diathesis.—This diathesis is characterised by white or milky urine, like chyle. The microscope, indeed, permits of the discovery in the urine of a certain number of white and red globules, and an innumerable quantity of molecular corpuscles agitated by the Brownian movement. A few fat-globules may be discovered. It is seen that these are the elements of the chyle, and their presence in the urine can only be explained by an *error loci;* that is to say, these globules have been transported in the circulatory torrent as far as the kidneys.

Chyluria is a disease peculiar to hot countries, and consequently connected with a torpid condition of the liver. The curative means employed are simple. The patients should take, every morning, one or two teaspoonfuls of Seidlitz salt, and, before meals, three granules of quassine. The diet should be substantial and cooling.

Choluric Diathesis.—This diathesis is due to the presence in the urine of the colouring matter of the bile or biliphein. This latter must not be confounded with the peculiar colouring principle of the urine, which differs according to the state of the blood and nerves. In choluria, the urine is constantly acid, on account of the excess of the biliary acids, independently of uric acid. Choluria gives rise to general malaise and to sufferings in various organs, which might easily be ascribed to rheumatism. It is true that the treatment is very similar, since it consists in the employment of the alkalines and arseniates. Arseniate of strychnine and digitaline should especially be administered:—

Three or four granules of each, together, daily.

Quassine must be given at the same time, in order to arouse the liver from its torpid condition:—

Two granules before meals.

Every morning, Seidlitz salt must be taken to refresh the blood.

Blennuric Diathesis.—In this diathesis, the urine is habitually loaded with mucus, which acts as a ferment, decomposing the urine, and giving rise to the formation of carbonate of ammonia, which has the effect not only of irritating the bladder, but of precipitating the earthy phosphates, and thus favouring deposits of ammonio-magnesian phosphates (*triple phosphate*).

This state will be counteracted by the daily use of Seidlitz salt, and by the employment of benzoate of soda.

Alkalinuric Diathesis.—Alkalinity of the urine may depend upon the presence of fixed or volatile bases. The fixed bases are : soda, lime, and magnesia ; the volatile base is, ammonia. The fixed bases arise generally from foods containing a large proportion of alkaline salts, or from waters charged with calcareous matters. The alkaline waters, such as those of Vichy, Vals, Contrexeville, Carlsbad, Marienbad, etc., may also produce this result. The volatile base (ammonia) proceeds from the blood, and proves a too-heating regimen, and the non-conversion of nitrogen into urea ; there is, therefore, constant danger of typhus. The daily use of the Seidlitz salt will ward off that danger, without adding to the fixed bases, for the small quantity of magnesia which it deposits prevents colics, and neutralizes the acids of the intestine. This salt also agrees with dyspeptic persons.

The Chanteaud Seidlitz may replace, with advantage, the natural saline mineral waters.

Aciduric Diathesis.—The acid state of the urine, as Liebig has shown, proceeds from the acid phosphate of soda, rather than from uric acid, which is found in it as a neutral urate, and the salts of which are not soluble in cold urine, any more than uric acid itself.

Acidity of the urine may also be due to fixed organic acids, and more rarely to volatile fat-acids.

Urine with a strong acid reaction is generally much coloured, the colour being brown, or reddish yellow. On cooling, it precipitates urates in abundance; its specific gravity is usually very high.

The abuse of mineral acids, and certain dyscrasias, such as rheumatic gout, are the most frequent causes of acid urine. The organic acids, on being transformed into alkaline carbonates, render the urine rather alkaline than acid.

Aciduria predisposes to uric acid and urate of ammonia calculi, and provokes vesical catarrh; thus it may be comprehended, how very important is the habitual use of the Seidlitz salt, in preventing grave diseases, which may attack the strongest constitutions. With the Chanteaud Seidlitz, these maladies will disappear.

I ought here to say a word concerning oxaluria, or the presence in the urine of oxalic acid, and the formation of oxalate of lime or mulberry calculi. This diathesis is the product of a starchy and saccharine alimentation.* The sugar not being completely burnt, is converted into oxalic acid. I have demonstrated this fact by feeding young dogs on starchy matters and sugar. In order to prevent this diathesis, a nitrogenous and saline diet is necessary. I must also speak concerning the necessity of common salt or chloride of sodium as an article of diet. A chemist, M. Bergé, has shown that without salt in the plasma of the blood, the fibrin, albumen, musculin, and ostéin, that is to say, all the nutritive juices of our blood and tissues, will solidify, and the red globules will be dissolved. These globules are decomposed in a solution of pure albumen, like as in distilled water, whilst albuminous water, containing only a hundredth part of common salt, preserves these globules perfectly, without alteration. When a man is deprived of chloride of sodium in his food, he becomes pale, chlorotic, and œdematous; his appetite fails, and the secretion of the saliva and of the gastric juice is diminished. Saline blood absorbs more oxygen, stimulates the chemico-physical act of nutrition of the tissues, and provokes the expulsion of the nitrogenous principles of regressive nutrition, through the kidneys, lungs, and skin. It is thus seen how very important a saline regimen is in the preservation of health.

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* A warning to vegetarians.—H.A.A.

Hæmoglobinuric Diathesis.—This diathesis is characterised by the presence in the urine of the colouring matter of the blood, and indicates a decomposition of the red globules. It has been observed in poisoning by carbonic oxide and by arsenuretted hydrogen, sulphate of copper, and chloral.

Spontaneous hæmoglobinuria is also observed, but more rarely. The *Répertoire* of 1873 relates a remarkable case of it. The young man who was affected with it was cured, thanks to the timely diagnosis which was made, and an appropriate treatment.

Hæmoglobinuria is distinguished from hæmaturia by its negative character; globules and fibrin being absent in the urine. The absence of albumen ought also to be noted, for no coagulum can here be obtained by chemical re-agents, which decompose the hæmoglobin immediately; acetic acid, for example. Acetate of lead, which does not decompose the hæmoglobin, does not even make the liquids turbid which hold it in solution. (Spring.)

The presence of hæmoglobin in the urine reveals itself by a tenuous matter, resembling coffee-grounds, insoluble in ether. When the quantity of hæmoglobin evacuated by the urine is but small, the general health may not be much disturbed; but grave disorders may result when the quantity discharged is equal to several ounces of blood, instances of which Vogel has cited.

The hæmoglobinuric diathesis will be remedied by the arseniates of strychnine and of iron:—

Three to six granules of each a-day;

and by a saline regimen, strengthening diet, and plenty of active exercise.

In toxic hæmoglobinuria, proceeding, for example, from confinement in a close place, where carbonic oxide or arsenuretted hydrogen are disengaged, recourse must be had to transfusion, so as to restore vivified red globules to the blood.

Injections of chloral, for producing anæsthesia, have been followed by death from asphyxia. It is therefore prudent to abstain from their use, now that we possess an agent like bichloride of methylene, which never fails in its effect, and the employment of which is perfectly safe.

Uræmic Diathesis.—The kidneys being designed to eliminate the urea from the blood in the form of uric acid and urates, it is necessary to consider the disorders which may result from insufficient elimination. These disorders, be it understood, are referable to a poisoning; hence, the name of *renal toxæmia*, proposed by Ruth.

Urea of itself is not a poison, since it has been introduced in relatively enormous quantities into the blood of animals without occasioning either death or poisoning. These disorders, according to Professor Freirichs, are due to carbonate of ammonia, formed at the expense of the urea accumulated in the blood. To this theory, the absence of a ferment has been opposed; but are there not the albuminous matters of the blood which might act as ferments? What is certain, is that animals whose kidneys had been extirpated, perished with symptoms of putrid decomposition, as M. Cl. Bernard has demonstrated.

Typhus, which is characterised by scanty urine, is, properly speaking, only a uræmia. It will be objected that septicæmia may have arisen from operative proceedings; but the same typhoid symptoms are produced when the cutaneous pores of an animal (a horse, for example) are obstructed by means of an impermeable coating. Now, the skin supplements the kidneys in the elimination of the urea, under the form of sudoric acid.

In Asiatic cholera, in which the suppression of urine is complete, a typhoid state is seen to supervene during the period of re-action, which can only be explained by the retention of urea in the blood.

The urine, under normal conditions, eliminates quite a series of unassimilable products, true organic wastes, which, under the influence of oxidation, or any other chemical action, tend to be metamorphosed into urea. A portion of these substances undergoes that transformation in the tissues, in the blood, and perhaps also in the kidneys. Another portion is eliminated by the urine without further change. If anuria declares itself, all these products do not delay to accumulate or to decompose in the blood and in the parenchyma, and their action on the nerve substance is interpreted by the uræmic phenomena. (*Spring.*) These morbid forms are numerous; I can therefore only indicate them here briefly.

Uræmic Accidents.—These are generally nervous disorders, which sometimes assume the character of depression, and sometimes that of excitation. As Rosenstein remarks, the depressive influence affects preferably the brain and the organs of sense, even to the point of constituting an acute anæmia of the encephalon; that is to say, in uræmia there is invariably impoverishment of the blood or hydræmia. *Post-mortem* examinations show that in uræmia there is œdema or at least anæmia of the brain, as Dr. Monod has proved in cases of children who died from uræmia.

The symptoms which characterise uræmia are the following: intellectual apathy, somnolence, and coma.. Uræmic coma may be in all points similar to apoplectic coma, but it commonly happens that it is not as profound nor as permanent; the patient recovers sensibility and consciousness from time to time; the coma is then replaced by stupor. It is after a few of these remissions that the coma becomes persistent. (*Spring.*)

We see here verified what I have previously mentioned concerning apoplectiform fever and its treatment; that is to say, it is necessary to avoid blood-lettings, but recourse must be had at first to hydroferrocyanate of quinine, against the accessions.

The febrile re-action which accompanies uræmic attacks, presents sometimes considerable elevation of the animal temperature (40°c.). In this case, recourse must be had to veratrine:—

A granule every half-hour;

but the hydroferrocyanate of quinine must be immediately reverted to, as soon as the temperature falls to 37°c.

Such is the treatment of acute uræmia. As regards chronic uræmia, its forms are very diverse. Thus, taking note of the organs of sense, it is observed that amblyopia may even extend to complete loss of vision, owing to sub-retinal œdema, which the ophthalmoscope will enable the physician to distinguish from retinal hæmorrhage. Phosphoric acid, sulphate of strychnine, and hydroferrocyanate of quinine must be given in this case:—

A granule of each, together, every hour.

A peculiarity to which the physician should direct his attention, is whether the pupils preserve their contractility or not. He will thus distinguish symptomatic amaurosis from organic amaurosis; that is to say, he will abstain from superfluous or hurtful treatments.

As to the hearing, there are buzzings and ringings, arising from a dryness of the membranes of the internal ear. Deafness, in this case, proceeds from œdema of the auditory utricles. Vertigo and disorders of the motory co-ordination (vide *Otitis*), and cephalic pains, generally of a hemicranic character, may result from it. The same treatment is indicated here as in amblyopia.

As to the organs of motion, there are convulsions—most often clonic—due also to cerebral anæmia, or hydræmia. These convulsions assume the form of epilepsy, and are *preceded* by the epileptic *aura*. It may be comprehended how much the treatment should vary here, according as there is softening or induration of the tissue of the spinal marrow. To give bromide of potassium in all cases, would be like the famous "*Prenez mon ours*" of the late M. Scribe (in *L'ours et le Pacha*).

In hydræmic epilepsy, arseniate of iron, arseniate of strychnine, and digitaline must be given:—

Three granules of each, together, daily.

Bromide of potassium is only indicated in acute spasms.

In uræmia, intolerable pains sometimes exist in the limbs and articulations, which should be calmed by morphine and hyosciamine:—

A granule of each, together, every half-hour, until sedation.

The administration of the Seidlitz salt is very important, as it will prevent gastric disorders, arising from a bilious state.

Gastralgias and enteralgias will be calmed by strychnine and hyosciamine:—

A granule of each, together, every half-hour, until sedation.

If there are disorders of respiration: dyspnœa, angina pectoris, etc., as they may terminate suddenly in pulmonary œdema, they must be combated without delay by arseniate of iron, arseniate of strychnine, and hyosciamine:—

A granule of each, together, every half-hour, until sedation.

Passive epistaxis is also seen to supervene in persons addicted to alcoholics; these hæmorrhages must be combated by hydroferrocyanate of quinine and arseniate of iron:—

A granule of each, together, every quarter-of-an-hour, until the epistaxis ceases.

Hydruric Diathesis.—In a state of health, the mean proportion between the fixed principles and the water of the urine is as follows, according to Vogel:—In 1000 parts: water 960, urea 23·3, uric acid 0·5, sodium chloride 11·0, phosphoric acid 2·3, sulphuric acid 1·3, ammonia 0·4; when this proportion exceeds 2000, it may be said that there is hydruria. Hydruria must not, however, be confounded with a momentary augmentation of the mass of liquid caused by copious libations; the urine is not impoverished in such a case, there is simply an addition to it of the water imbibed. In true hydruria, there is a loss of density, that is to say, of the proper elements of the urine. This state is often observed in epileptiform hysterias, and is connected with uræmia, the extractive principles of the urine being left in the blood. The same remedies are therefore indicated as in uræmia.

I would here make a remark relative to fermented or distilled drinks, the consumption of which increases every day in consequence of a deplorable abuse, which the force of opinion has been unable to repress.

The popular saying, "The blood of drunkards turns into water," is well known; indeed, the alcohol destroys the red globules, and the ether *(le spiritus)* infiltrating into the tissues, the blood becomes watery. I will add, that the want of saline principles (distilled or fermented drinks containing little or none) and the increased intravascular pressure, produce albuminuria. (Vide *the latter.*)

The abuse of fermented drinks induces, therefore, hydruria. It is known, indeed, that great beer-drinkers are bloated and infiltrated. One might allege extenuating circumstances in favour of hopped beers, but in most of the so-called beers, the hop is a myth, independently that the sprouting barley is replaced by glucose, and the gluten eliminated, in order to render the beer clearer. The hop is replaced by bitters which do not possess its antifermentative qualities, therefore, beer turns sour, and causes colics and intestinal crudities. I may also add, that instead of a potable water, a selenitic water is often used. In place of a wholesome drink, tonic and nourishing, we get a beverage agreeable to the eye, but debilitating. It is useless to say why the environs of beer-houses are inundated.

DIATHESES FROM EXTERNAL CAUSES.

Saturnine Diathesis.—This diathesis arises from the penetration of lead, minutely divided or in the state of salt (carbonate, etc.), into the tissues—especially into the skin and the mucous membranes, as indicated by the blue tinge on the borders of the gums, and beneath the nails—and is also due to anæmia, caused by the alteration of the red globules of the blood. This diathesis may be transmitted by heredity, under the forms of convulsions and idiocy.

Lead-poisoning causes obstinate constipation, with frightful colics and intestinal paralysis. There are also pains in the limbs, with paralysis, commencing in the extensors.

Working plumbers and painters are particularly liable to lead-poisoning. It may also follow the drinking of beer which has been drawn by the pump through lead pipes.

To destroy the saturnine diathesis, the lead must be eliminated from the tissues ; to effect that purpose, there is no better method than the hydrosulphuric vapour baths of Dr. Brémond; the lead is deposited on the surface of the body, as a greyish layer (or sulphuret). As the temperature can be raised to 40—42°c., all the sebaceous matter is dissolved, and the skin is rendered more permeable.

Hyosciamine and sulphate of strychnine must be given to combat saturnine colic :—

A granule of each, together, with a table-spoonful of fresh castor oil, to be repeated at the end of an hour if the effect is not produced.

The method of treatment pursued at the Civil Hospital of Ghent is as follows : the patient having been kept for some minutes (20 to 30) in the sulphurous vapour cabinet, is made to take an ordinary bath, and afterwards a spoonful of castor oil is administered along with one granule of hyosciamine, and one of strychnine.

The strychnine is for the purpose of stopping the paralysis of the longitudinal fleshy columns of the large intestine, and the hyosciamine, for dissipating the spasm of the circular fibres.

This treatment is continued as long as the symptoms persist.

The patient should have a tonic regimen, and take every morning a tea-spoonful of Seidlitz salt.

Anæmia must be combated by arseniate of iron :—

Six granules a-day.

Mercurial Diathesis.—This diathesis is due to the presence in the body of finely divided mercury, as among working looking-glass makers, or it may be caused by a salt of mercury, in consequence of the abuse of mercurial treatment. Mercury produces the symptoms of secondary syphilis : aphthæ, salivation, humid eruptions of the skin, swelling of the gums, pains in the limbs, swelling of the bones (gummata), loss of hair, etc. It also produces mercurial trembling. To combat this diathesis, patients must be submitted to iodized vapour baths, and at the same time the anæmia must be combated by tonics.*

The iodine forms with the mercury a soluble compound, which passes out of the economy in the urine (protoiodide of mercury).

Cupreous Diathesis.—This diathesis is caused by either accidental or criminal poisoning, although the latter may be difficult to effect, on account of the vomitings provoked by sulphate of copper. Formerly, preparations of copper were much used in the treatment of ulcers of a bad kind. The cupreous diathesis may also depend upon the adulteration of bread.

Poisoning by copper gives rise to gastro-intestinal irritations, with vomitings, colics, sanguinolent alvine dejections, and convulsions. These accidents will be combated by hydroferrocyanate of quinine, and hyosciamine :—

A granule of each, together, every half-hour, until sedation.

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* Arseniate of strychnine and arseniate of iron.—H.A.A.

Zinc or Cadmic Diathesis.—This diathesis is observed among workmen employed in the reduction of zinc ore. It may be also the result of the application of caustic zinc (chloride of zinc). It is characterised by a bloated condition of the body, and by petechial eruption, salivation, loss of appetite, and nausea. It will be best combated by an iodized treatment, and by tonics (quassine, strychnine, phosphoric acid, etc.).

Iodic Diathesis.—Iodine destroys the plasticity of the blood, predisposes to passive hæmorrhages from the nose, lungs, and intestines, and produces infiltration of the connective tissues; in a word, leads to lymphatism.* To correct this diathesis, the reconstituents of the blood are required (arseniates).

Arsenical Diathesis.—This diathesis arises from the abuse of arsenic, especially under the forms of Fowler's and Pearson's solutions, the doses of which are difficult to fix, and which are imprudently left to the patients.† I would also mention the infatuation there has been for this medicament. It is not therefore astonishing that alterations of the blood are seen to supervene, as in all slow metallic poisoning. The face is bloated, the eyelids being especially so, the complexion becomes anæmic, and there are pantings. These anæmic symptoms will be combated by ferruginous preparations, especially by Chanteaud's soluble oxide of iron.

Ferruginous Diathesis.—The abuse of ferruginous preparations gives rise to a dyspepsia, characterised by weight at the stomach, nidorous eructations, constipation, and stools coloured black by the tannate or sulphuret of iron. To correct this condition, daily use must be made of the Seidlitz salt.

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* This diathesis may be produced by the prolonged medicinal use of iodide of potassium. Many so-called "Blood Mixtures" have for their basis iodide of potassium. The public are warned against their employment. They are most dangerous.—H.A.A.

† The arsenical diathesis may also be produced by living or sleeping in rooms, the wall-papers of which contain arsenic.—H.A.A.

Paludal Diathesis.—This diathesis is due to the penetration into the organism of a paludal or marsh miasm. The body insensibly acquires a turfy condition; it becomes dry, and assumes a fossil appearance. The liver and spleen are generally altered, digestion is performed with difficulty, and infiltrations or dropsies supervene. This condition will be remedied by the arseniates of soda and of strychnine:—

Four to six granules of each, together, daily.

Dartrous Diathesis; Herpetism.—The dartrous or herpetic diathesis is a modification of either scrofula, rheumatism, syphilis, or of certain parasitical poisonings, principally lichens: in a word, it is an alteration or vice of the blood. That is why the ancients believed in the repercussion of the dartres; that is to say, symptoms of carditis, hepatitis, pneumonia, etc., were seen to supervene, when the eruption suddenly disappeared from the skin or from the mucous membranes, to which affections the name of dartrous was given, because, in reality, they are drawn from the same source.

From this it must be concluded, not that the dartres should be respected, but that they must be cured by means appropriate to their causes and to the constitution of each patient. In order to facilitate the treatment, I will divide the dartres into dry and moist. Among the dry dartres must be classed the furfuraceous dartre and the squamous dartre (lepra). The moist dartres, much more numerous, comprise phlyctenoid dartre (herpes), erythematoid dartre, pustulous dartre (acne), and corroding dartre (lupus).

Dry herpetic diathesis demands the use of the arseniates; the humid diathesis requires to be treated by the iodides and cod-liver oil. In both kinds, a strengthening and refreshing regimen must be insisted upon, consequently, the daily use of the Seidlitz salt.

Cancerous Diathesis.—This diathesis has its source in the *blood,* hence the straw-coloured complexion which is peculiar to cancerous persons. There are, however, cancers which the French term *fleuris*, because they attack persons of a feeble constitution, and even children. Such are, for example, the encephaloid or medullary cancers (fungus hæmatodes).

I believe I can find the reason of these differences in the mode of development of cancers; some developing in the red globules and others in the white globules of the blood. Be that as it may, my own view of the matter is, that in order to prevent cancer and oppose its return, the blood crasis must be modified, sometimes by the arseniates, and sometimes by the iodides.

When the constitution shall thus have been sufficiently corrected, the ablation of the cancers might be proceeded with. Until then, it is dangerous to interfere with them, because, being extirpated in one place, the cancer breaks out in another, often to the injury of the patient. Thus cancer of the breast is often repeated in the internal organs: the spleen, the liver, and the kidneys.

In cancerous cachexia, that is to say, when the lymphatic ganglia are affected, it is perfectly useless to interfere with the cancer, since there is the certainty of its return. The rapid increase of the cancerous cells may in this case be prevented, by dressing the ulcer with carbolized water or oil, which has the property of killing microscopic ferments (bacteria).

As to the lancinating pains, they will be calmed by cicutine.

Hemlock has been vaunted as a specific for cancer, but we know what importance to attach to it in this respect. Hemlock, however, may dissolve the surrounding mass, and thus ward off inflammatory accidents. This is what Trousseau said concerning it:—"In 1836 we were more incredulous than we are to-day as to the value to be attached to hemlock; but in the course of the year 1840, we have, at the Hôpital Necker and in our own practice, experienced this medicament, and we must declare that it has appeared to us the most powerful agent in the treatment of chronic engorgements. We have seen hemlock cataplasms, continuously applied to the abdomen, cure two ascitic dropsies, due, the one to chronic peritonitis, the other to the presence of numerous tumours in the abdomen. The cure was complete after three months' treatment. We even went so far as to endeavour to treat pulmonary phthisis with hemlock. We caused the whole of the chest to be enclosed in a kind of cuirass, coated with a thick layer of hemlock-plaster. This cuirass was renewed every four or five days. This simple remedy calms the cough, and renders expectoration more easy, at the same time it allays the pains in the chest so common with phthisical persons. Under the influence of this medication, the fever is generally moderated. In a word, we have obtained with many consumptive persons, in whom the disease proceeded rather slowly, an amendment and a suspension of accidents which we should not have had with any other known remedy. Is it therefore to be said that we pretended to cure phthisis and cancer, those diseases which are the reproach of therapeutics and the despair of practitioners? God forbid that we should make such a pretension. But we believe that with the help of hemlock, one may, in a certain number of cases, moderate the internal inflammatory condition, which hastens the degeneration and softening of cancers, and which disorganizes so rapidly the lungs of those who had at first but a small number of tubercles." (*Manuel Médical*, 2nd edition.)

It is to be regretted that this great *clinicien* should have been too soon lost to science; he was not one of those who oppose themselves to all progress; and if the dosimetric method had been introduced during his lifetime, I am persuaded that he would have lent it the support of his authority. At least, he would not have condemned it without having tested it.

To resume my remarks as to the treatment of cancer, I will *say that* no cutting operation ought to be performed but with great reserve, and that in every case it should be preceded and followed by an internal treatment with the arseniates and iodides, as well as with cicutine, to diminish the morbid susceptibility. If the engorgement is considerable, it will be necessary to give:—

Arseniate of soda, four to six granules a-day; and cicutine, two granules, morning and night.

In case of anæmia, choice should be made of arseniate of iron:—

Four to six granules, daily.

If the cause has been a dartre, it will be necessary to give:—

Cicutine, four granules; iodide of arsenic, six to eight granules a-day.

If, on the contrary, there is a venereal cause, a mercurial iodide must be administered:—

Cicutine, protiodide of mercury; four granules of each, daily.

It is thus seen that the internal treatment should vary according to the morbid cause.

It is useless to seek for a specific against cancer: there is none, no more than against any diathesis whatsoever. What is necessary is, to modify the blood, and to endeavour to restore it to its physiological condition. In order to effect this purpose, the vital forces must be sustained by giving the arseniate of strychnine:—

Two granules in the evening, with the cicutine.

There are no modifiers which go better together than strychnine and cicutine, since they are both vital incitants.

What has been said concerning the violence of cicutine, so far as wishing to compare it with prussic acid, is evidently exaggerated. I have very often taken granules until the physiological effect has been produced, that is to say, until the vital functions have been artificially incited, and this is what I have remarked:—

On the part of the functions of the brain: a tendency to repose, and a sleep without fatigue, a drowsiness quite different to that produced by morphine—which causes a feeling of pressure or tightness—and a calm awakening without headache.

On the part of the vegetative functions: a slackening of the pulse, and a notable increase of diuresis and diaphoresis. It may be comprehended that hemlock thus calms the pains of cancer, and repairs the strength of the patient by inducing sleep.*

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* Professor Clay has claimed for *pure* Chian turpentine almost specific powers in the cure and relief of cancer, notably uterine. In his hands this agent has been remarkably successful. It appears to have similar therapeutical properties to hemlock, as regards its action on cancer, only much more powerful and lasting. It should receive an extensive trial from the profession. For full particulars, Professor Clay's articles on this subject in the "Lancet" should be consulted. I may add that sufferers from cancer should be treated by combining Professor Clay's method with that of the illustrious Professor of Ghent.—H.A.A.

DOSIMETRIC TREATMENT OF NEUROSES.

THE Neuroses are disorders of innervation, depending sometimes upon a condition of congestion, and sometimes upon anæmia; so that their treatment must vary according to those causes.

Hysteria.—This affection must be placed at the head of the neuroses, since it may involve at the same time both the cerebro-spinal nervous system, and the great sympathetic.

Congestive hysteria is connected with a plethoric condition, or orgasm, especially of the uterus and its appendages (the ovaries). Women who are subject to it are generally viragos. Frequently it is the venereal desire which has not been satisfied.

This *hysterical passion* leads sometimes to disorders purely nervous, such as laryngeal spasm—amounting almost to hydrophobia*— nymphomania, and comatose convulsions; sometimes to psychical aberrations of the most whimsical character, with momentary suspension of the action of the external senses, and a species of clairvoyance, such as is noticed in animal magnetism. The *Répertoire* of 1876 contains a remarkable case of the above kind. Congestive hysteria requires a calming and refreshing treatment. In this case, recourse may be had to bromated camphor :—

Three to four granules, daily ; and every morning, the Seidlitz salt.

Uterine spasm must be combated by hyosciamine, with which bromated camphor should be combined :—

A granule of each, every half-hour, until cessation of spasm.

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* It is known that the non-gratification of the sexual desires among animals, notably among domestic dogs, leads to hydrophobia, as I have previously pointed out.

Assafœtida, which is used in these cases, and which is often abused, has also for its object the relaxing of the spasm. But many women have a repugnancy to it, on account of its penetrating odour, and its acrid and bitter taste.

In congestive hysteria, it is sometimes necessary to remove engorgement of the uterine neck, by the application of leeches.

In anæmic or chloro-anæmic hysteria—the most obstinate kind, and which is accompanied by epileptiform convulsions—it is necessary, independently of ferruginous preparations, to make use of antispasmodics. These medicaments should be chosen from the series of the valerianates: such as valerianate of iron, against the anæmia :—

Five to six granules a-day.

Valerianate of zinc, against the convulsions :—

Six to ten granules a day.

Valerianate of quinine, against the periodic paroxysms :—

Ten to twelve granules, in the interval of the paroxysms.

The ethers must be abstained from as much as possible, because they only increase the nervous susceptibility by provoking anæmia. If the latter is profound, recourse must be had to arseniate of iron, which, of all the ferruginous medicaments, is that which augments in a greater proportion the number of the red globules of the blood.

Among the hysterical suspensive neuroses, I will signalise aphonia and dysphagia, apart from all inflammatory or organic cause. In these cases, recourse must be had to strychnine, in combination with hyosciamine :—

A granule of each, together, every hour, until cessation of spasm.

The same treatment must be adopted in the pneumatoses, those singular swellings which may give rise to errors of diagnosis: such are nervous tympanites, hysterical physometria, etc.

Asthma.—Of all the neuroses, asthma is the most persistent, *because it* is often connected with constitutional or organic circumstances. It is necessary to distinguish asthma from the stridulous or anginous affections, of which I have previously treated, and which are entirely fortuitous, whilst asthma often persists throughout the whole of life, or at least for a long period, since the asthmatical only lose their infirmity by age.

True asthma is recognised by certain peculiar signs. The asthmatic is or has been rickety: his head is between his shoulders, his skull is large, his back is curved, and his chest is flat; his respiration is sonorous, sometimes loud and whistling, without râles (except during the paroxysms). The latter commence gradually, the respiration becomes more and more difficult and jerking; the face, at first pale, expresses great anxiety, and afterwards becomes injected and blue; the asthma is then at its height, and carbonic asphyxia declares itself; indeed, the expired air contains eleven volumes of carbonic acid to eighty-nine of nitrogen.

What has taken place? Evidently, there has been spasm of the small bronchi, and therefore dilatation of the pulmonary cells; the chest is also sonorous on percussion. Towards the base there is often tympanism, because there is accumulation of gas in the stomach. Vesicular breathing is diminished, suppressed, or replaced by a tubo-vesicular respiration, which, when the air at moments penetrates into the lungs, is rough and hurried. There are movable sonorous and sibilant râles, that is to say, they change from place to place every moment. The sibilant râles are sharper, intenser, and longer on expiration than on inspiration. At the end of the paroxysm, the râles become humid, and the bubbles larger and larger.

The accession begins suddenly, or by degrees, and also stops suddenly, or gradually, with cough and a thick expectoration. It leaves a feeling of great lassitude behind it, and the whole body feels as though broken. The warmth having returned, abundant diuresis takes place. The urine is loaded with urates. Rarely is there a single paroxysm, or if there is, it is rather of the nature of a sternalgia. (Vide *Neuralgias.*) There are periods *composed of* several successive paroxysms.

Asthma ceases with age; but it often happens tl asthmatic persons reach that age when their infirmity leave them, they are carried off by organic maladies heart or lungs.

Before speaking of treatment, I will say a word con the differential diagnosis, because it is the latter which decide the question.

I have given the stamp of the asthmatic; the abs all physical signs of organic maladies of the heart and moreover, corroborates this first view. I will not sp angina pectoris, which is so distressing and painful, and gives rise to fever, sometimes continuous, and someti mittent or periodic. In asthma, there is complete abs pain, and the paroxysm terminates by the return of h angina pectoris, on the contrary, the heat is often th mencement of a cardio-pulmonary inflammation. In congestion is always passive.

The treatment of asthma should be that of the d general or local conditions of the disease. As to the condition, it is evident that there is either a hereditar accidental dyscrasia. The latter is easier to remove t former, seeing that though climates may be avoided, in vices cannot altogether be escaped. Nevertheless, man matical persons are cured or relieved by change of c those who inhabit a marshy country should remove t one. A humid atmosphere is especially noxious to a matic person. A dry atmosphere does not, however, un suit him (*inter utrumque*). The asthmatic will receive from a residence at the sea-coast, because there the baro pressure is the greatest. Elevated plateaux would onl the difficulty of respiration, on account of the rarity of Here, again, there are intermediate localities.*

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* A patient of mine always receives benefit from a few weeks' at Davos Platz, in Switzerland. For further particulars of this *also of its* dosimetric treatment, see the *Répertoire* of 1881. Co *air-baths* are sometimes beneficial in asthma.—H.A.A.

In the second place, the blood crasis will be ameliorated by the reconstituents, such as arseniate of strychnine and arseniate of iron :—

A granule of each, together, three to four times a-day.

During the paroxysms, hydroferrocyanate of quinine, and hyosciamine will be given :—

A granule of each, together, every half-hour, until the paroxysm ceases.

It is necessary to take into account the dyscrasias or diatheses which have produced accidental asthma, or which have exaggerated constitutional asthma. Thus, the asthma of the gouty requires the treatment of the gouty and rheumatic diathesis—colchicine, quassine and jalapine, on account of the inertia of the digestive and urinary passages :—

A granule of each, together, morning and night.

The asthma of the syphilitic requires the mercurials and the iodides.

Toxic asthma demands the treatment for the poisoning to which it is due. Such is the asthma of workers in lead, copper and mercury. (Vide those *Diatheses.*)

In short, there are several other asthmas due to poisoning: such as the asthma of smokers, the asthma of drinkers, the asthma of opium smokers, in a word, the asthma of every excess which induces dyscrasia of the blood.

In every one of these conditions, the bowels must be kept free by the daily use of Seidlitz salt.

DOSIMETRIC TREATMENT OF INSANITY.

Hypochondriasis.—This affection may be placed at the head of the various forms of insanity, because it is often but a step to mental alienation.

Hufeland has defined hypochondriasis "the hysteria of man," and there is some amount of truth in that definition, since inasmuch as hysteria is common among women, so is hypochondriasis among men. In both affections, there is also an abdominal neurosis, which is the cause of the brain being occupied with sad, anxious, and suspicious ideas. In hypochondriasis there is dyscrasia, that is to say, incomplete elaboration of the blood, and the same phenomena of spasm and swelling are observed as in hysteria. The predominant symptom is constipation; black, resinous-like stools indicate an engorgement of the whole abdominal venous system. The first care ought, consequently, to consist in maintaining abdominal freedom by the morning use of Seidlitz salt; and in case of obstinate constipation, by podophylline, to which should be added hyosciamine, for the purpose of relaxing intestinal spasm :—

A granule of each, together, morning and night.

The hypochondriac must be made to take plenty of exercise, having some definite object in view.

Respecting therapeutical treatment, as visceral engorgements most often exist, arseniate of soda must be administered :—

Two granules at meals.

Anæmia will be best combated by arseniate of iron, with the arseniate of strychnine as a vital incitant :—

A granule of each, together, morning and night.

Phrenzy.—It is difficult to separate those mental alienations classed under the above designation, from the abdominal neuroses (hysteria and hypochondriasis). It may be said that it is the animal sphere which usurps the intellectual sphere; whence that painful contest which Guislain has described under the name of *phrenopathy*. The individual is no longer master of his actions or of his will, and in consequence of his dangerous tendencies, it is necessary to confine him. Indeed, in these cases, the instincts of animals are mostly observed. Thus there are the *homicidal* insane, the *quarrelsome* insane, the *howling* insane, the *thievish* insane, etc. This would seem to support Gall's theory concerning the localisation of the cerebral faculties. Lunacy must not be confounded with the aberrations or deliriums due to material lesions of the brain, and which lead to paralysis after a period of more or less prolonged excitement. These are generally produced through physical excesses, such as the abuse of spirits.

The physician who is consulted in these cases as to the propriety of confinement, should distinguish between these two orders of mental affections. Unhappily, there are no special establishments, and the mad and the delirious are shut up in the same tomb.

I say tomb, because they rarely quit it, and if they do, it is with loss of reputation.

The treatment of cerebral madness should be similar to that of hypochondriasis, that is to say, care must be especially taken to maintain the abdominal freedom by the use of the Seidlitz salt, podophylline, hyosciamine, quassine, and jalapine.

But what is especially important in the treatment of cerebral madness, is to remove the fixed delusions of the individuals by means of bodily fatigue,—even as grief is forgotten by work. Unhappily, the regulations of our asylums are opposed to such a system. The colonial system of Gheel is therefore preferable. In that colony there is an infirmary, used in cases of indisposition or of great excitement; but as soon as the lunatic has become tranquil, he is restored to his adopted family. There exists a single exception,—homicidal or suicidal monomania, attacks of which cannot be foreseen, for these monomaniacs will dissemble in order to carry out their design. They must therefore be kept in confinement.

The abuse of spirits is a cause of mental alienation, notably absinthism, which is distinguished from alcoholism by being ecstatic, whilst the latter is characterised by great agitation,—*delirium tremens*. In both forms, phosphoric acid, sulphate of strychnine, and digitaline may restore calm, if hyperæmia or cerebral softening does not already exist:—

A granule of each, together, every hour until sedation.

DOSIMETRIC TREATMENT
OF
ORGANIC DISEASES.

Until the time arrives when medicine shall have for its aim the jugulation of acute diseases, dosimetry will never cease being at war with pathological anatomy. However, as the latter does not always depend upon the physician, I will now describe the principal organic lesions, as well as the means of preventing them.

ORGANOPATHIC PHENOMENA OF INFLAMMATION.

Inflammation being the source of organic lesions, this process must be studied from an anatomo-pathologic point of view. This is what I intend to do, in a few words.

Inflammation is not only a hyperæmia,—a congestion,—it is especially a neoplasy. It forms therefore the transition between the disorders of circulation and those of nutrition.

It may even be said that hyperæmia does not always exist, since tissues completely unprovided with vessels may present the phenomena of inflammation: for example, the transparent cornea (corneitis), and the cartilages (chondritis).

It is true that in vascular tissues inflammation is most intense. Let me proceed from this point, and say: inflammation being essentially a vital process, must be attacked by dynamic means; mechanical measures, such as bleeding, compression, etc., being only secondary.

In the first part of this *Handbook*, the dynamic treatment has been examined, I shall not therefore refer to it again.

I will now take each of the phenomena of inflammation, and seek to estimate the mechanism, in order to apply the treatment.

Congestion.—*First stage.*—On the application of an irritant to the tissues, a contraction of the capillaries takes place; this stage, therefore, is an act of contractility. The blood circulates with more difficulty, and more slowly; the vessels strangle the globules, thus causing them to be arrested, not only in their general or circulatory movement, but also in their proper or amœboid movements. A stagnation consequently results,—a venous state, in other words, the animal caloric increases. Indeed, it is well known that venous blood is warmer than arterial blood by 1° centigrade.

Second Stage.—The capillaries are paralysed and consequently distended; the blood no longer circulates, it oscillates. This condition may even proceed to the extent of rupture of the vessels, and gangrene.

Third Stage.—The serous portion of the blood passes by expression through the pores of the vessels, bringing with it a certain number of white globules; hence, two orders of phenomena: suppuration and hepatisation. Pus is formed from a crowd of corpuscles, evidently borrowed from the blood, since they possess all the characteristics of blood globules. I have previously explained Konheim's theory and the microscopic observations of Koëliker. There cannot therefore be any doubt on this subject. But it is important to state, that the white globules, once out of the circulatory current and distributed in the connective tissue, continue to live as isolated organisms; they multiply there, unless they are destroyed by toxic agents. Among these agents must be mentioned carbolic acid, the essential oils (turpentine, camomile) and alcohol. Hence, the utility of these for preventing suppuration. I shall return to the subject by and by, when speaking of dressings.

Hepatisation must be understood as the accumulation of white globules in the parenchymatous tissues, to the point of causing them to lose all permeability. It is this which happens, for example, in inflamed pulmonary tissue. These globules or corpuscles end in dissolution, and disappear by absorption.

Fourth Stage.—Degenerations.—This stage is much more remote; it takes place when the globules are not dissolved, but when, on the contrary, by the action of a local cause, which is the passage of inflammation from the acute to the chronic stage, these globules are multiplied. The parent cell is then seen to give birth to a brood of cells, which thus produce abnormal tissues, or degenerations.

Among these degenerations or heteromorphies, I must call attention to the following:—

1. **Amyloid Degeneration.**—In this degeneration, the corpuscles are rounded or oval, of variable dimensions, and are disposed in concentric layers about a nucleus. It is in this form of degeneration that the white globule is the most appreciable; it is also observed in most of the cachexias from deglobulisation of the blood, consequent on the syphilitic, cancerous and tuberculous diatheses. It may be met with in all the tissues: bones, glands, nerves, ganglia, etc.

2. **Colloid Degeneration.** — This degeneration especially attacks the epithelium, to which it bears a great analogy both in composition and consistence. The colloid matter is deposited about a nucleus, which it surrounds with a transparent opaline zone. It is the commencement of epithelial cancer.

3. **Tuberculous Degeneration.**—This proceeds from miliary granulations, rounded or slightly oval, the diameter of each being about three millimetres; of a grey colour, at first translucent, but tending soon to become opaque. Confirmed tubercle is but a *corpus mortuum*, that is to say, having undergone caseous or cretaceous transformation. By its softening, it gives rise to suppuration and hectic fever.

4. **Sarcomatous Degeneration.**—This form is due
oidal or oval cells, granulated and nucleated. Thes
lations form a firm pulp, creaking under the scalpel, in
with tough fibres and some vessels. They are fib
tumours, undergoing sometimes a considerable develo

5. **Cancerous Degeneration.**—This is the *résumé*,
tessence, one might say, of the degenerations. M
epithelial, colloid, and tuberculous elements are me
it; therefore cancers are very variable as to their na
may attack all constitutions. This form of degene
the organic hydra, devouring the tissues which ar
its reach.

From all I have just said, let us deduce this pra
ference: that inflammation should be jugulated as s
commences, if the physician would not desire to see
organic disorders which I have just described. The
inflammation is rather a debilitation than an exagge
the vital forces; an asthenia rather than a sthenia
quently, it is necessary from the commencement
recourse to the excito-motors.

Respecting the anatomo-pathologic results of infla
such as suppuration, hepatisation, and degeneratio
must be prevented by destroying, on the parts affe
white globules, which tend to multiply as soon as the
from their habitual medium, that is to say, from the cir
stream. This state of things might be very well c
to an overflowing river, which, on retiring, has left on
a crowd of germs, which do not delay to develop th
as soon as possible. It is therefore the overflow whi
be prevented. In other words, the resistance of the
instead of being diminished, should be increased. I
an obvious example of this. Formerly (and perha
now we should not think it necessary to do otherwis
plasms were employed in surgery. This was a *softening*
that is to say, by means of humid heat the multiplic

the white corpuscles was favoured. Therefore suppurations did not dry up, and the pus became of a bad nature, that is, ferments were developed in it, and thus gave rise to ichor. At the present time, antiseptic dressings are applied to wounds, either carbolic acid, turpentine, or alcohol, and there are seldom any suppurations, and therefore no purulent re-absorption, in consequence of which there is no mortality, or at the least, very little. It may be seen from the above, that the healing art is a reality when it is well understood and properly applied.

I will now pass on to the treatment of organic diseases.

The treatment of organic maladies being a matter of time, the first rule should be to husband and augment the forces of the patients. Likewise it is strange conduct to employ debilitants, under the pretext that there is irritation.

Look at phthisis in its colliquative period : the patient is a prey to a burning fever, consequently he loses his strength enormously ; he is seen to be wasting away, and yet, what is given him ? A vitiated air, since his friends dare not ventilate his apartment ; unsavoury nourishment, medicines still more so : in a word, what is called a *soothing* treatment. The word is ill chosen, since the malaise, the suffering of the poor consumptive, is only increased. The cough tears his chest, without giving him strength to expel the expectoration. All this would not, perhaps, have happened, if from the very first he had been submitted to an excito-motor treatment, if the arseniates had been given to him, and if the acute fever had been jugulated by the alkaloids. And even now that he is marasmous, that he is poisoned by his muco-pus, why not give him arseniate of cafeine, which has the effect of diminishing the waste ; arseniate of iron, which would reconstruct his blood ; and arseniate of strychnine, which would restore strength to the pulmonary organ to free itself from the inflammatory products which obstruct it ? Why not make him breathe an atmosphere charged with the vapours of carbolic acid, turpentine, or chlorine? * Thus, in the treatment of organic diseases, it is especially the strength of the patient which must be attended to. Nature has means which art does not possess for promoting recovery from organic disorders, but she must have time. Now, it is this time which should be given her by a logical or natural treatment, but not in an illogical manner, or according to arbitrary system.

I am a declared enemy of the organic school; let it not, however, be believed that I reject the means of investigation, such as the stethoscope and auscultation.† These serve as guides, and point out what parts it is necessary to succour. Thus, by the râles and by the bubblings, new congestions may be recognised, and may be counteracted by the revulsants and defervescents. *Hæret lethalis arundo*, as the poet says; but these affections can be parried by giving in seasonable time, digitaline, which decreases the strokes of the heart, and at the same time, arseniate of iron, which gives more plasticity to the blood; and arseniate of strychnine, which gives more resistance to the walls of the vessels. It is thus that the physician truly worthy of that name, disputes the ground, inch by inch, with death, instead of allowing the disease to act for the benefit of the autopsy.

Let me speak of diseases which are, moreover, completely inexorable, when nothing is done to check their progress. I allude to organic diseases of the heart. There is panting on the part of the patient, his countenance already expresses the presentiment of death ; is it necessary to weaken him because his pulse is tumultuous ? But its irregularities, the coldness of the extremities and their infiltration, announce an approaching end. Why not retard it? Why not give along with digitaline, arseniate of iron and arseniate of strychnine ? Narcotics, in these cases, only veil the spectacle of death, but do not in the least delay the catastrophe.

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* Mayer and Meltzer's "Improved Mackenzie's Naso-Oral Antiseptic Respirator," might be used by phthisical patients. It is constructed of coralline, instead of metal. The coralline being a bad conductor of heat, the expired moisture does not therefore condense on the inside of the respirator, as it does in a metal one. It is also very light, and fits better than a metal respirator. May be used with carbolic acid, creosote, or other antiseptics.—H.A.A.

† In addition to the stethoscope and clinical thermometer, every physician should carry with him on his daily round of visiting, either Dudgeon's or Pond's sphygmograph, and a portable urinary test-case.—H.A.A.

SYMPTOMATOLOGY OR MORBID SYMPTOMS.

I WILL now refer to the symptomatology of morbid accidents, of which the late Professor Spring has sketched out a masterly table. Alas ! like the astronomer of the fable, through scrutinising the field of pathological anatomy, he allowed himself to be swallowed up in its gulf, for he succumbed to a confluent small-pox. But who will say that if he had understood the importance of therapeutics, he would not have applied it to himself ?

VALUE OF SYMPTOMATOLOGY IN CEREBRAL LESIONS.

AMONG the nervous disorders which announce cerebral lesions, the Professor of Liége points out *prosopalgia*, *prosopoanæsthesia*, and *prosopoplegia*. (Spring was a lover of Greek. Such love is perhaps a fault, but it is a means of fixing the memory by a word.)

Prosopalgia or Prosoponeuralgia consists in pains of the face ; *prosopoanæsthesia*, in a diminution or complete suppression of the sensibility of that region ; *prosopoplegia*, in the suppression of the facial muscular movements. The physician may thus read in the face the nature of the disease. *Prosopalgia* is dependent upon intra-cranial or intra-cerebral tumours. It constantly affects other nerves besides those of the face, especially the trigeminal. It indicates induration of the spinal marrow, in the neighbourhood of the rhomboidal sinus.

There are, then, epileptiform symptoms; but what is to be done? The hour of death is indicated; there is at most but the autopsy to verify the cause of death.

Cerebral *prosopoanœsthesia* is caused by hæmorrhagic foci, softenings or circumscribed exudations, tuberculous or other tumours, destroying the intra-cranial or intra-cerebral portions of the trigeminal nerve. The anæsthesia is most frequently unilateral; but what is to be done? Logically, the nervines should be given: phosphoric acid and sulphate of strychnine, not, however, against the lesion, but to sustain the action of those parts of the brain which remain intact.

Cerebral *prosopoplegia*, or paralysis of the face—unless from a direct action on the facial nerves, as in rheumatism—indicates a hæmorrhage, a circumscribed softening, or a tumour at the base of the skull, compressing the facial nerve in the neighbourhood of the annular protuberance.

Spring says that the paralysis is most frequently partial, confined to the buccinators, and to the levators of the alæ nasi, and of the upper eyelid; the orbiculars of the eyelids remain intact, and the other facial muscles, even when they cease to obey the will, continue, however, to contract under the stimulus of the passions.

The hearing is always disturbed in intra-cranial prosopoplegia, and the compression extends to the common oculo-motor nerve. The levators of the upper eyelid, the right internal, rarely the right external, are successively paralysed, if not at the very commencement, at least during the progress of the lesion. Doubtless these facts are very interesting from a physiological point of view; but the treatment in this case can be but palliative, that is to say, only new congestions can be prevented.

In most of the cerebral organopathies, nervous delirium is observed; it is the custom to combat the latter by narcotics; this is a mistake. On the contrary, it must be opposed by the *opium* of the heart, that is, by digitaline.

VALUE OF SYMPTOMATOLOGY IN PULMONARY LESIONS.

One of the most constant symptoms is anhelation, or shortness of breath. It is remarked in infiltrations and in obstruction from chronic pulmonary inflammations (hepatisations), also in tuberculous degenerations, emphysema, and stenosis. It must be opposed by strychnine. Arseniate of strychnine is the medicament which succeeds the best in these cases. Care must be taken not to debilitate the patient, more especially as there is very often anæmia. Arseniate of iron must therefore be given, conjointly with arseniate of strychnine and digitaline, which latter is—according to the fine expression of Cullen respecting digitalis—"the opium of the heart." *(Bis repetita placent.)*

A granule of each, together, every hour, until cessation of the symptoms.

Bradypnœa, which is a more advanced degree of respiratory embarrassment, is remarked in compression of the respiratory nerves, or of those portions of the nervous centres which correspond thereto.

There is great acceleration of the heart's movements in these cases, which must be checked by the same means as above.

Ataxiopnœa, or irregularity of the respiratory rhythm, announces either partial bronchitis, a pleuritic effusion, a pneumothorax, or the obstruction of a bronchial branch by tubercle. Inspiration is manifestly longer than expiration. Independently of mechanical obstacle, the lungs must be aided by the administration of strychnine.

As to the mechanical obstacle, if it depends upon an effusion, it is necessary—as I have previously mentioned—to have recourse to thoracic capillary aspiration. Here is a conclusive case which I borrow from the work of Dr. Castiaux, of Lille (Nord), entitled: *Documents pour servir à l'étude de la méthode aspiratrice :—*

"A youth, eighteen years of age, was seized suddenly with general malaise, shivering, fever and lumbago. The cough was but slight, and ceased entirely after fifteen days. The patient feeling better, took a walk for two hours, but returned very fatigued, with a stitch in the side under the left breast. Arrived at the hospital, this young man complained constantly of the same pain, and was taken every evening with a slight accession of fever. There was no dyspepsia; he slept well, the appetite was maintained, and the bowels acted regularly. The respiration was so easy that the patient was able to sit on his bed without difficulty, and would rise if permitted. Percussion indicated a normal sonorousness of the left side, and an absolute dulness of the right side, extending from the apex to the base of the lung. Auscultation revealed normal respiration on the left side, but a considerable diminution of the vesicular murmur on the right side, with some sub-crepitant râles imitating friction, and especially below the spine of the scapula. No œgophony, but a slightly veiled blowing. The thoracic vibrations existed as distinctly at the right side as at the left, perhaps even they were slightly increased at the right side. This anomaly was of a nature to singularly obscure the diagnosis; recourse was had to Dieulafoy's aspirator, and from the right side liquid to the amount of 900 grammes was withdrawn. A short time afterwards the patient was discharged cured."

The above observation demonstrates how pleurisy is often insidious at its commencement; that is why a positive diagnosis must not be waited for ere acting. The first symptoms, such as initial shivering and pungent pain, are sufficient to indicate the necessity of giving strychnine or quinine (arseniate), digitaline, and cicutine. Physicians who attend the most to pathological anatomy, are those who value therapeutics the least. But it would be a serious error to believe that every sthenia must be opposed by asthenics. It is the contrary which is usually true.

In affections of the larynx, of the trachea, and of the bronchi, the respiration is sibilant, because of the diminution of the calibre of those passages, or because of a mechanical obstacle; there is either a nervous condition, or an exudation. In the former case, recourse must be had to antispasmodics and tonics, as hyosciamine and hydroferrocyanate of quinine; this is the case in croupal affections in general; in the latter case, emetics must be employed, and should these be insufficient, tracheotomy must be performed. I refer to what I have previously stated concerning *stridulous* affections.

Cough.—Of all the organopathic phenomena, cough is that which annoys the patient the most, and which most embarrasses the physician. The latter ought to discover if the cough proceeds from the larynx, trachea, bronchi, lungs, heart, or stomach, or even from a still deeper source, and what is the nature of the lesion that causes it.

Laryngopathic cough is hoarse, shrill, and barking. (Vide *Laryngitis.—Neuroses.*) The peculiar cough of syphilitic laryngitis is known. (For the treatment, vide *Inflammations.—Diatheses.*)

Dyspeptic cough is guttural. It is observed in affections of the pharynx, œsophagus, and stomach. (Vide the diseases of those organs.)

Pleuritic cough is dry, frequent and short. In parietal pleurisy, cough is excited every time percussion is practised. (Vide *Pleurisy.*)

Cardiopathic cough is dry, without expectoration. In stricture of the mitral orifice, it is intense and frequent. (Vide *Inflammations of the Heart.*)

Pneumopathic cough exists in consequence of compression, obstruction, atrophy, effusion, hepatisation, tuberculosis, melanosis, or emphysema. It is painful when there is inflammation.

It is sufficient for the practitioner to be informed of the different kinds of cough, in order that his attention may be directed at once to the determining affection. Among the sedatives of cough, whatever may be the cause that determines it, I will mention cicutine. It suffices to masticate a granule of it, and to let it gently diffuse itself through the saliva, in order to abate the cough momentarily. This operation may be repeated three or four times a-day, or during the night. Cicutine has not an acrid taste, and does not cause any constriction in the throat. If a slight degree of narcotism is perceived, the medicament must be immediately suspended.

A granule of iodoform may also be masticated, taking care to shut the mouth, in order that the saffron emanations may penetrate into the principal passages.

Dyspnœas.—Cardiopathic dyspnœa may be confounded with asthma, but it is distinguished from it by the signs of auscultation and percussion. There is, however, here a difficulty ; when auscultation is practised during the paroxysms, the abnormal valvular sounds are absent, which, however, exist during the intervals. The true practitioner will not, however, be thus deceived. The contrary happens in widening of the left auriculo-ventricular orifice. Dyspnœa is also one of the symptoms of aneurism of the ascending aorta, but here there are symptoms of cerebral anæmia.

In these anhelations, strychnine must be administered, combining it with hyosciamine, if there is spasm at the same time. (Vide *Asthma.*)

It is necessary to proceed in the same manner in respiratory insufficiencies arising from weakness or paralysis of the respiratory muscles. This is the case in myelopathic and cerebral dyspnœas. The physician must then act as in affections of the brain, and of the spinal marrow. (Vide those affections.) In anæmic dyspnœa, the blood must rather be acted on. (Vide *Chloro-anæmic Diathesis.*)

Palpitations of the Heart.—These palpitations are connected sometimes with a plethora, sometimes with a purely nervous or neurotic condition, and sometimes with an organo*pàthy.*

In plethoric palpitations, the heart-beats are violent. They resemble the blows of a hammer heard at a distance. After general bleeding, digitaline must be administered :—

A granule every half-hour, until sedation.

Organopathic palpitations are especially peculiar to carditis, and are remarked more in dilatation than in hypertrophy. Consequently the treatment should be contracting: arseniate of strychnine :—

A granule every hour, until cessation of the palpitations.

In acrotism, there is suspension or momentary interruption of the movements of the heart. It is especially observed in dilatation of the left ventricle. Sudden death is then to be feared, the countenance is injected and bluish, and carbonic delirium terminates the scene. Bleeding would prove mortal in this case. Arseniate of strychnine, and arseniate of iron must be administered :—

A granule of each, every half-hour, during the entire duration of the accession.

When there is effusion into the pericardium,* digitaline must be added :—

A granule, conjointly with the arseniate of strychnine, and the arseniate of iron.

ABDOMINAL ORGANOPATHIES.

I WILL first speak concerning mechanical hæmatemesis, as a transition between organopathies of the chest and those of the abdomen. When the blood meets with a permanent obstacle to its passage through the lungs and heart, as also through the spleen and liver, it accumulates in the gastro-epiploic veins. Now, this venous plexus is voluminous. Hæmatemesis—of which the ancients have given an explanation in accordance with their humoral doctrines, that is to say, they attributed it to black bile—depends, therefore, upon obstruction, sometimes upon obliteration of the portal vein, or is caused by pressure upon or contraction of the vena cava inferior. Hæmatemesis rarely happens in organic diseases of the liver, but, on the contrary, it occurs in those of the spleen and of the heart, notably in stenosis, or insufficiency of the tricuspid valves. The quantity of blood vomited is more or less considerable, and there is a profound anæmia. It is against this latter that the treatment must be directed. Arseniate of iron and cicutine must therefore be given :—

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* Capillary aspiration may be required.—H.A.A.

A granule of each, together, every hour, after having washed out the stomach with Seidlitz salt.

The same treatment must be applied in pultaceous and cancerous hæmatemesis.

Organopathic gastrodynia is accompanied with violent pains in perforating ulcer and scirrhus. Cicutine and quassine should be given :—

A granule of each, together, every hour, until sedation.

Organopathic enterodynia, such as chronic catarrh and tuberculosis, requires hyosciamine, in order to calm the colics:—

A granule every half-hour, until sedation.

In typhlitis and perityphlitis, the pain which occupies the right iliac fossa is dull and interrupted by griping; later, in proportion as the serous membrane is invaded by the inflammation, the pain becomes violent, lancinating, and shooting, and is increased by movement and pressure. As there is organic lesion of the cœcum, especially after typhoid, the practitioner must be content with sedatives: cicutine and morphine :—

A granule of each, together, every half-hour, until sedation.

In stenosic colic, due to an ileus, recourse must be had, as long as the strangulation is not confirmed, to oils and atropine :—

A granule every quarter-of-an-hour, with a spoonful of olive oil.

But strangulation having declared itself, there is no other remedy than gastrotomy. I would remark that this operation is dangerous, precisely on account of the delay in performing it.

Enterorrhagia is observed in typhoid and in cancer. It must be opposed by acidulated drinks and by tannic acid :—

A granule every half-hour.

Organopathic Icterus.—It is connected with organic affections of the liver. In acute atrophy from hepatitis, there are dull, heavy pains in the right hypochondrium. Jaundice is not so pronounced, nor the stools so discoloured as in spasmodic or stenotic icterus arising from spasm, or obliteration of the biliary ducts. Recourse must be had to the antiphlogistics.

In cirrhosis, jaundice also is not complete. The liver no longer acting, the kidneys supply its place; therefore symptoms of denutrition or marasmus are seen rapidly to supervene. The fever is acute, and the disease runs a rapid course. Andral had previously observed, that in cirrhosis the animal temperature is elevated: 40, 41°c.* In this affection, arseniate of cafeine must be given :—

A granule every hour.

The hepatic organopathies leave in the blood the elements of the bile. (Vide *Diatheses.*) The blood must therefore be refreshed by the Seidlitz salt, and quassine must be given :—

Two or three granules before meals.

Renal Organopathy.—Organic diseases of the kidneys consist in a hyperplasy of the renal cells, or in granular fatty degeneration: often the two combined. These organs no longer acting, infiltrations or anasarca result, and there is discharge of albumen in the urine.

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* Were it not for alcoholic drinks, cirrhosis would very rarely be seen.—H.A.A.

In acute albuminuria, anasarca makes its first appearance in the eyelids and face. Later on, it extends to the ankles and legs. In chronic albuminuria, the contrary is the case: anasarca of the face often does not exist. Ascites, hydrothorax, œdema of the lungs, serous suffusions of the brain and of the spinal marrow, successively supervene, in proportion as the difficulty of respiration increases. A principal fact, is the arrest of the insensible perspiration of the skin. At the same time, anæmia and hydræmia are present.

The consequence of this anatomo-pathological condition is, that apart from acute albuminuria, the antiphlogistics are required. (Vide *Nephritis.*) The reconstituents of the blood must be immediately administered, notably the arseniates and iron. A milk diet must also be insisted upon.

MEDICAL THERMOMETRY.

The ascertaining of the temperature of the patient, is as necessary to the physician as the inspection of the manometer is to the engineer, for thereby they both succeed in preventing accidents. I may therefore be permitted here to enter into some details. The temperature of the body ought to be studied in its three states, viz., the *normal*, the *hyponormal*, and the *hypernormal*.

1. The *normal state*.—The normal temperature (37°c.) exists in many chronic diseases. It might be supposed, *à priori*, that in these cases the thermometer is valueless; it would, however, be a mistaken idea. This negative symptom, the absence of fever, is of real value, not only in the diagnosis, but also in the prognosis and treatment. It indicates that the affection from which the patient suffers does not present great danger.

2. The *hyponormal state*.—When the temperature descends below 37°c., it proves a state of great weakness on the part of the organism. Abundant hæmorrhages, long privations, and prolonged exposure to cold, may cause this condition. Lowering of the temperature is also a fatal form of termination in some fevers. In one or two days, the temperature of the body is seen to descend from 41°c. to 35°c., and even lower. Therapeutics must not declare itself to be powerless. It should, on the contrary, seek to re-kindle the vital flame by the nervines, such as phosphoric acid, sulphate of strychnine, and benzoate of ammonia,* which have especially the effect of stimulating the blood:—

A granule of each, together, every quarter-of-an-hour, until return of the animal heat.

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* The ancients employed in such cases the *spiritus cornu cervi* (hartshorn).

In the algid state, the treatment must be the same as in pernicious fevers. (Vide *Algid Fevers.*)

Organic affections of the great systems of nutrition are accompanied frequently by a lowering of the animal temperature. Here not only will the thermometer serve as a guide to diagnosis and prognosis, but will also indicate the treatment.

Lowering of the animal temperature is frequently observed in insanity.

3. The *hypernormal state.*—It is in acute diseases that the thermometer becomes an indispensable auxiliary to the physician; it may be said that the progress of the temperature is that of the disease.

The same degree of heat does not exist in all acute diseases, and this is what distinguishes them as regards their gravity.

Generally, in acute catarrhal affections, the animal temperature only rises from 1° to 2°c. above the physiological mean (37°c.); on the contrary, in the more frankly inflammatory affections, which attack the serous membranes and the great parenchymata, fever commences with one or two shiverings, and the temperature soon reaches 38° to 40°c., and even higher. These affections also are more serious, and require special attention on the part of the physician, and a very energetic treatment.

There exists a class of very important diseases, which are distinguished by a typical course of development. These are the zymotic or infectious diseases. Here the thermometer renders great services. Thanks to it, the diagnosis and prognosis become easy and sure.

The duty of the physician is to moderate the temperature when it rises too high, to prevent the exaggerated combustion of the organic elements, and to render the economy able to replace the materials consumed by the fever.

There are certain circumstances which ought not to escape the physician who observes his thermometer. Thus, he ought *to consider,* in the first place, the individuality of his patient.

It is true that in children the increase of the animal heat has in general the same significance as in adults. Children, however, present a higher degree of temperature in the same affections which attack adults, and with them, fever is developed much more rapidly. They are also subject to attacks of ephemeral fever, which are not always void of gravity. During convalescence, even, the animal temperature in children often remains febrile. In this respect, aged persons present quite opposite phenomena. With them, the increase of animal heat is not so much to be feared as its diminution. With children, we have convulsions, excitation and fever; with the aged, vital depression. Therefore, the diminution of the animal temperature in an aged person must not be looked upon with indifference. A fatal result must be expected when the temperature in an aged patient descends to 36° or 35°c. ; the physician must in this case endeavour to prevent the collapsus by every means in his power, and must not delay acting until the organism has lost its powers, and remains insensible to the most heroic remedies.

It must not be forgotten that in a state of perfect health, the animal temperature presents diurnal variations ; these oscillations are maintained in disease; they are, however, more pronounced. It is not rare to find a difference of 0·5°c. between the morning temperature and that of the evening, and that as a normal condition ; but if the physician finds that the morning temperature is lower than that of the late evening, he must not, therefore, draw too favourable a conclusion from the circumstance. It is true that in certain diseases and under the influence of causes more or less understood, the inverse can be produced : the morning temperature surpassing that of the evening; but this is not the rule, and in general, the oscillations of the morbid temperature coincide with the diurnal oscillations of the disease. After all, clinical thermometry has acquired in the last few years a practical utility quite as great as auscultation and percussion, and has permitted the practitioner to arrive at the following conclusions :—

1. The preservation of the normal temperature of the body (37°c.) in disease, generally renders the prognosis less grave.

2. The increase of the normal temperature of the body is in proportion to the intensity and nature of the fever. In the frankly acute affections the temperature rises rapidly, and rarely exceeds 40°c.; in malignant affections, the elevation is less rapid and less frank, but it goes up to 41°, 42°, and even 43°c. A higher temperature would be incompatible with life, as the blood would probably coagulate in the vessels.*

3. The decrease of the normal animal temperature indicates an exhaustion of the organism, either rapid or slow, in proportion to the rapidity or slowness with which the falling of the temperature takes place.

4. In thermometrical observations, the idiosyncrasy of the individual as affecting the diurnal oscillations of the normal and of the pathological temperature, must be taken into account.†

"The thermometer is a most admirable thing as made use of in disease," writes Dr. Liégard, of Caen. "The more use I make of it, and the firmer becomes my conviction of its great value; every day adds to the sum of my observations. I have published a work on 'Cerebral Meningitis,' and some days since I had under my care a little girl, aged three years, who presented all the symptoms of the above formidable disease at its outset: intense fever, great heat of the head, alternation of redness and paleness, sudden and frequent startings, delirium, cries and agitation, especially during the night. It appeared to me, however, that there were paroxysms; that it was a general disease, rather than a local inflammation; but this was, perhaps, only a surmise without foundation. I applied the thermometer; it began to rise, and was only arrested at 40·5°c. Being now more free from doubt, I reassured the frightened mother, and I administered, the two following days, thirty centigrammes of sulphate of quinine. The night and the first day of administration of the remedy were calm; the next day the pulse had lost much of its frequency, and the thermometer registered no more than 40°c. It was still an excessive temperature, and we were obliged to continue the precious antiperiodic for one or two days. Without the thermometer, I should not have administered the quinine, and the poor child might have been placed in the greatest danger through the succession of paroxysms."

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* Although the above is true as a general rule, yet it is now well known that persons have recovered from injury or disease, in whom the temperature greatly exceeded 43°c., and was so maintained for a considerable time. (See Mr. J. W. Teale's "Case of excessive and long-maintained High Temperature after Spinal Injuries—Recovery." *(Trans. Clin. Soc.)* —H.A.A.

† Some persons in a condition of perfect health will invariably have an evening temperature 1°c. higher than the normal standard (37°c.). In these individuals, a temperature (0·5°c.) below the normal may yet be *compatible* with health.—H.A.A.

What is the consequence, if the case is one of larval fever and a diagnosis has not been made in time? The physician loses his patient through not immediately giving the febrifuge.

I have spoken at the commencement of this work, concerning the epidemic of pernicious fever which prevailed in Holland in 1826, and extended from there to Belgium. The cold stage was very short, and the thermometer rose rapidly to 40°, or even to 41°c., to fall again towards the end of the accession below the physiological mean. There was the danger, since the economy could not resist these sudden changes of temperature; moreover, if sulphate of quinine were not given, the patient succumbed.

In Asiatic cholera, the same oscillations are remarked; but here the algid stage is longer, and may cause death from the rapid loss of animal heat—as in asphyxia from cold; but in the period of reaction, the danger is no less great, since the thermometer registers sometimes 40° or 41°c., for it is only maintained there a relatively short time, and descends again below the physiological mean, 35°, 34°c., and even lower, so that the patient's body becomes to the touch as cold as that of a reptile. What is usually done? Endeavours are made to warm the patient by means of artificial heat; but this can effect nothing upon a surface which is no longer receiving any heat from the interior : cholera patients have been known to receive severe burns without feeling pain. Diffusible stimulants are often given, but these only increase the gastro-intestinal irritation, and provoke a typhoid state.* It is necessary, then, as soon as the reaction supervenes, to maintain it by the excito-motors, such as the arseniate and hydroferrocyanate of quinine, adding to them cicutine, morphine, hyosciamine (the variable treatment), according as there is spasm or pain, and digitaline to re-establish the urinary secretion, and prevent uræmia. (Vide *Diatheses.*)

When the reaction, in pyrexias, is insufficient, two types are produced, the *remittent* and the *intermittent*; in the former there is oscillation between circulation and calorification, consequently, variation of the stages of cold, heat and sweating. But these variations establish themselves in a more or less constant and regular manner; we have an example of this in typhoid fever. Thus, from a thermometrical point of view, this fever may be said to consist of three stages: in the first—which lasts from three to five days—the temperature increases each day progressively; each evening the heat is from 0·5° to 1°c. higher than that of the previous evening, the maximum morning remission not exceeding 0·5°c. The temperature having arrived, on the fourth or fifth day, at 39·5°c. in mild cases, at 40·5°c., 41°c. and even higher in grave cases, the next period commences. During this period the temperature oscillates between 39·5°, 40° or 40·5°c., according to the gravity of the case; then, finally, after one, two, or even three weeks of ascending oscillations, the descending oscillations appear. This third stage, in grave cases, is separated from the second by an intermediate stage, which Wunderlich designated the *amphibodal* stage. This period is always of serious signification; it stands out in a striking manner above the rest of the graphic tracing, by its irregularity; notably, by its sudden elevations from time to time in the evening. Wunderlich has formulated the following laws:—

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* In all choleraic affections, it is a popular belief that brandy must be frequently given. But this is an error fraught with great danger. The administration of that stimulant often turns the balance in favour of *death.*—H.A.A.

(a.) A pyrexia which, on the second day, presents in an adult a temperature bordering on 40°c., is not typhoid fever.

(b.) A pyrexia which, after the evening of the fourth day does not present a temperature higher than 39°c., is not typhoid fever.

(c.) A pyrexia which, in the second part of the first week, presents a temperature invariably below 39·5°c., is not typhoid fever.

I will remark here, that what constitutes typhoid fever is not so much the thermal state, as the cause which produces it; for it is true, that the more the miasm attacks the vitality, that is, paralyses the ganglionic nervous system, the more the temperature tends to rise. Physiological experiments have led to this result, that we now know there are vaso-motor nerves, some of which are constrictors, and others dilators; the former are frigorifics, because they drive the blood with more rapidity through the circulatory system, consequently, the blood is cool—that proceeding from the lungs: the latter or dilators are calorifics, because they allow the blood to stagnate in the organs, and permit it there to become overheated.

I will, therefore, say: A pyrexia in which the temperature is progressively elevated, notwithstanding the morning remissions of 0·5°c. at the most, so that it attains on the fourth or fifth day an elevation of 39·5°c. to 41°c., and which, then, is maintained during the second portion of the week above 39·5°c., is probably a typhoid fever.

Relatively to the prognosis—even as I have said—the indications furnished by the thermometer are extremely important; thus, the elevation of the animal temperature to 43°c. may prove mortal; it would be positively so at 45°c., because the blood would coagulate.* At 41°c., the case is very grave; at 40°c., it is less so; and at 39·5°c., it is relatively favourable. The prognosis will be so much the better when the morning remission is most marked. The falling of the temperature is a good sign, but on condition that it is not sudden, and takes place only in a normal manner, and in a proper time. In the second or stationary period of typhoid fever, a rapid fall from 41°c. to 37°, 36°c., and lower, is a mortal sign. Such falling announces a hæmorrhage, or a collapsus of the heart. A very considerable elevation taking place suddenly, is usually the beginning of the agony. It is always a bad sign when the exacerbation commences before noon, and does not terminate till after midnight.

In the intermittent type of fever, the three stages of cold, heat, and sweating, are separated by an interval of repose, or apyrexia; the return to a state of health would appear to be complete, if from certain signs of paleness and prostration the physician was not aware that the accession would return. Such observation constitutes what one may call the eye of the physician, *oculus medici*.

The first, or cold stage being accomplished, the temperature rapidly rises, according to the intensity of the fever, to 39·5°, or 40°c.; the heat is pungent, the pulse is accelerated (110, 120), the eyes have an unaccustomed brightness, the mouth is dry, the thirst is keen, and the urine is scanty and dark-coloured. After this stage occurs that of perspiration; the skin becomes moist, the pulse slackens, the mouth is moistened, the whole body is covered with an abundant perspiration, and the patient falls into a grateful slumber.

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* *Vide* Note, page 148.—H.A.A.

I will offer, again, some remarks respecting the thermal condition. The duration of cold is subject to variation, which may depend upon external and internal circumstances. Thus, when the patient remains exposed from without to an atmosphere both cold and damp, it is evident that the reaction cannot be established. This is the danger to armies in the field, where the want of camping materials gives rise to so many disasters.* As to internal circumstances, there is spasm which opposes the reaction; the peripheral vessels being contracted, the blood is retained in the interior, and may thus induce mortal accidents: coma, apoplexies, etc. It is in these conditions that the larval fevers are produced, which may assume the most diverse forms. They always indicate a high degree of the disease, and a profound intoxication (poisoning).

I will now say with Professor Spring *(Accidents morbides):* that the peculiar form, the intensity, and the duration of a fever, are determined on one side by the proximate or efficient cause (which is often a parasite, accomplishing its adapted life in the diseased organism), and on the other side by the quantity of susceptible materials which serve as nutriment to the morbid process. Hence, the necessity of washing the intestine every morning with the Seidlitz salt. In this respect the physician is often like the pretor: "*De minimis non curat Prætor,*" and he is wrong. Our predecessors attached much more importance than we do to this part of the treatment; they satisfied themselves whether the matters were "laudable" or not. It is, however, better to eliminate them at once as they are produced, for in fevers the stools are always overheated. Alimentation being suspended, they are composed only of the products of abnormal secretions, which it is dangerous to allow to remain in the body. Thus *fecin* is a miasm proper, and one of the most dangerous of the autochthons. It is in this way that so many grave fevers are seen to develop themselves in armies on the march. In the African campaigns, General Bugeaud, whose solicitude for the troops caused him to be called "*The father Bugeaud*," was accustomed to make every morning the tour of the encampments, in order to be assured by the dejections, of the health of the soldiers; and when the officers of health came at his orders, he often astonished them by his hygieno-pathological remarks. I think that the use of the Seidlitz salt in every army would singularly simplify the medical service, according to that adage of Ovid :—

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* This was exemplified in the Crimean war.—H.A.A.

> "Principis obsta, sero medicina paratur
> Cum mala per longas involuere moras."

On examining well the character of fever, the observer recognises in it, whilst there is vital re-action, the element of spasm, the elements of pain and agitation, also the congestive and inflammatory elements. The first, or spasm, is present especially at the commencement. It is that which determines the cold fit. All the fibrillary system enters into movement, and contracts. This movement, which is very marked in the skin, takes place also in the interior: "One is cold in the back." Its intensity will depend upon the intensity or the prolongation of the action of the morbid cause, upon the individual susceptibility, upon the losses made by the economy, upon its privations, and also upon moral impressions. It should be understood that in such conditions everything that weakens the organism may prove mortal. The cold fit therefore requires the antispasmodics. It will be well to administer some drops of laudanum in an ethereal mixture. It is in the same way that the alcoholate of aconite acts. During the peripheral spasm, the blood is driven back towards the interior, and the vessels of the heart are distended and paralysed. There is the same condition as was produced in the experiments of M. Cl. Bernard, when he cut the great sympathetic. It results from those experiments,—as from those of Brown-Séquard,—that increase of heat is the consequence of the dilatation of the vessels. Another physiologist, Professor Traube,* started from the hypothesis of a regulating or moderating nervous apparatus. It would act after the manner of the *inhibitory (empêchants)* apparatus in general, that is to say, it would behave with regard to organic renovation or nutrition, like the pneumogastric nerve, especially the left, with regard to the heart. It would check hæmatosic combustion in this sense, that without it oxidation of the blood would be excessive, and the body would be heated.

I like to recall these anatomo-physiological theories, because they include the great law of vitality, a law which the "father of medicine"† had recognised, notwithstanding the absence of all technical knowledge. Thus, in fever there are not only chemico-physical phenomena, but there are,—and especially,—vital phenomena, the former being subordinate to the latter.‡ The treatment should also be dynamic or vitalistic. In acute pyrexia, the alkaloids are always indicated. Quinine acts, not in the interval of the accessions, as one would be tempted to believe, but against the subsequent accession, in moderating the re-action, and in facilitating the functions of secretion and excretion, that is to say, by favouring the elimination of the products of combustion. Digitaline thus acts as regards urea. Veratrine has quite a special action on the skin, aconitine on the gastric mucous membrane, and colchicine on the kidneys. There is in the above, as may be seen, a fertile source of experimentation.

Andral sought to determine the variations of the temperature of the body, together with the quantitative variations of some of its solid parts, and of the urine: fibrine, albumen, globules, urea, etc., and he arrived at this conclusion: that when the blood contains more than the four-thousandth part of fibrine, the temperature is elevated, and that this elevation is proportional to that of the plastic element.

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* Professor Traube died at Berlin.

† Hippocrates.

‡ Still may not vital forces be only very subtle and complicated mechanico-chemical forces?—H.A.A.

This conclusion is conformable to that of the same physician concerning inflammations and pyrexias, alike in connection, not with the red globules of the blood, but with the white globules. He gives a table of twenty chlorotic persons, with whom, although the red globules were notably diminished, the temperature was above 37°c. This explains why fever is so quickly originated among the chloro-anæmic; why the animal temperature increases in proportion as the blood becomes impoverished; why prolonged fasting heats the body, and why the regimen must never be carried to that extent, in which the resisting powers of the patients are weakened; and why, finally, blood-lettings, *unseasonably* performed, bring about the opposite of that which was anticipated from them, in other words, they increase the fever. I say *unseasonably* performed, because made at a *proper time*, when there is true plethora, as in the parenchymatous inflammations,—notably in pneumonia,—they relieve the circulation, restore the pulse, promote evaporation, and consequently refresh the body. But this last result will be much better brought about by the use of the Seidlitz salt.

The diminution of the albumen of the blood is not in direct proportion to the depression of the animal temperature. It is only after a longer or shorter time, as is observed in albuminuria and in animals which perish from inanition, that insufficiency of albuminous matters causes the temperature to fall in a slightly notable manner. Hence, the treatment which I have indicated in the albuminuric diathesis, by Seidlitz salt, arseniate of strychnine, and an albuminous diet. (Vide *Albuminuria.*)

There exists, on the contrary, a direct proportion between the temperature of the body and the quantity of urea eliminated by the kidneys. In thirty-two analyses of urine, belonging to different patients in whom the temperature was normal, Andral found only eight times more than twelve grammes of urea. In pyrexias, he ascertained that a greater elevation of temperature and an increased quantity of urea always existed together. Thus in twenty-three analyses of urine obtained from patients suffering from intermittent fevers, he found eleven times, between twenty and thirty-two grammes of urea; nine times, between sixteen and twenty grammes; and twice, only thirteen and fourteen grammes.

The same proportionate harmony exists in pneumonia, pleurisy, acute articular rheumatism, and in eruptive and typhoid fevers. As to the latter, if some authors have admitted a diminution of the urea, Andral observes that the regimen to which the patients are submitted, acts on the urea in a contrary direction to the fever. It may happen in a prolonged pyrexia, that the urea, without ceasing to be eliminated in considerable quantity, nevertheless begins to diminish, the temperature being maintained at the same degree. There is a disease which constitutes an exception to the preceding rule, viz.: cirrhosis of the liver, in which Andral verified an increase of urea, from urinary analyses. This disease, although apyretic, behaves in the above respect like the pyrexias. Andral asks if it may be supposed in this case, that the azotized matters of the bile, which no longer can be carried out of the blood by the altered liver, find a supplementary way of elimination in the kidneys; and he seems disposed to settle this question in the affirmative, founding his opinion on physiological experiments, which demonstrate a similar interchangeable relationship between the eliminative functions. The ovipara might here be taken as an example, in which, in presence of a liver relatively little developed—some are in want of the gall-bladder—the kidneys are provided with a double venous system: the renal veins properly so-called, which correspond to the arteries, and a renal portal vein which empties itself into the hepatic portal vein. *(Venous system of Jacobson.)* The enormous quantity of urea and urates contributed by birds is known, and it cannot be doubted that this may be a means of cooling among animals in which the whole body is only a heating apparatus.

The investigations of the French hæmatologist throw great light on pyrexias and inflammations ; they show that the animal caloric is proportional to the quantity of urea in the blood. But, the alkaloids, by increasing the renal and cutaneous secretions, that is to say, by promoting the elimination of the azotized principles, cause the heat and the pulse to fall, and, consequently, diminish fever and inflammation. Most inflammations—even traumatic—are localised fevers, subject to the influence of an occasional cause. Thus, when pleurisy or pneumonia break out spontaneously, it is because there is a predisposition, for the occasional cause is often very slight; it is the drop of water which causes the glass to overflow. It is the same in articular rheumatism, and in all inflammations in general, in which the alkaloids perform wonders.

When there is plethora, preliminary blood-letting assists the action of the medicaments ; instead, then, of removing this resource from therapeutics, it must be made use of wherever it is necessary. To innovate is not to oppose ; this is what the narrow-minded cannot comprehend.

But if bleeding is necessary when there is plethora or superabundance of blood, it is not so in leucocythæmia, in which inflammations are more to be dreaded because they take place, not by reason of the red globules, but rather from a superabundance of the white globules of the blood. If, in consequence of the degeneration of our populations, the necessity for general bleeding is less urgent than formerly, still that is no reason why it should be excluded from therapeutics. We bleed in order to relieve the circulation, no matter the cause which has produced the embarrassment. A pneumonia at the commencement, with great oppression, necessitates the opening of a vein. Catharto-emetics, in this case, are at best but a compromise, and it would be dangerous to rely upon them exclusively. It is the same in acute diseases of the heart, in which Hufeland rebukes his contemporaries for no longer bleeding.*

I will not even except certain adynamic conditions which may equally demand blood-lettings, not *subtractives*, but *derivatives*, with the design of preventing hypostasis in the chief organs. Thus, cerebral, pneumonic, and abdominal phenomena will be more certainly combated by the dynamic sedatives, after bleeding has been performed. For example, morphine is more efficacious after blood-letting than before. Stimulants and antiperiodics also act more surely when blood-letting has been *seasonably* performed. He is the true practitioner who is not exclusive.

Concerning the alkaloids, when and how must they be administered? Here there may be some doubt. Should they be given in the pyretic state, or must they rather be reserved for the apyrexia? I think that this depends upon circumstances; thus, when the danger is imminent, and when loss of time would be mortal, the defervescents must be given, *even in the height of the fever;* and there need be no fear of this increasing the reaction, since the alkaloids cause the pulse and heat to fall. The danger arises from the excess of caloric, which must, therefore, be conquered immediately.

NOTE.—It is absolutely necessary in pyrexias and inflammations that the temperature be determined frequently. It is often very inconvenient, or even impossible, for the physician to take hourly records of the variations of temperature in cases of acute disease, with the ordinary clinical thermometer, to say nothing of the annoyance and irritation to which the patient is subjected from the constant application and withdrawal of that instrument. And yet how necessary it is to be acquainted with the condition of the temperature during the whole twenty-four hours of the day, say in a case of typhoid fever. Now the medical practitioner usually contents himself by observing the morning and evening temperatures.

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* Bleeding, however, should be preceded and followed by the administration of strychnine (arseniate or sulphate).—H.A.A.

But what about all the other hours unobserved? Of such, he knows literally nothing. For want of this essential knowledge, the patient may die. If the hourly variations are known, medicaments can be employed with greater precision. It may then be ascertained with accuracy when to give aconitine or veratrine, strychnine, digitaline, or quinine, and when to cease the administration of these alkaloids. An instrument which will register all the variations of temperature during twenty-four hours, may be placed on the patient's body, and hourly observed by an intelligent nurse in the absence of the physician, and the needful medicaments administered, as indicated by the varying conditions of the temperature (of course, acting only on the practitioner's instructions, as previously given for her guidance).

Mr. W. D. Bowkett, late house-physician at the Leeds Fever Hospital, has invented and patented a "Clinical Thermograph." This apparatus determines and records on permanent diagrams, all variations of temperature occurring in any patient during twenty-four hours. The following description of this invaluable instrument is taken from *Braithwaite's Retrospect*:—

"The principle involved in its construction is that of applying the pressure resulting from the expansion of a liquid in a closed chamber, under varying temperatures, for the purpose of recording these variations. The expansion produced in a given liquid by an increase of temperature is proportionate to that increase, and if its free expansion be restrained, the resulting pressure is also proportionate.

"The thermal portion of the instrument consists of a metallic vessel, rigid and unyielding, about three inches in diameter, and one-third of an inch in thickness. In connection with this is a curved hollow tube or spring, much smaller in size, but similar to that used in the Bourdon steam gauge. One end of this tube is fixed to the vessel, with the chamber of which it communicates; the other extremity is closed, and is in connection with a simple lever-movement, increasing a first motion some three or four times. The whole is filled with liquid, and hermetically sealed. Now any increase of temperature causes the contained liquid to expand. The vessel being unyielding, the expansive force influences the tube only, whose form renders it elastic, in such a manner as to cause the end in connection with the lever to recede from its position of rest, and the lever is thus moved upon the recording surface.

"The recording surface consists of a dial or disc of cardboard, set in motion by watch-work, occupying the centre of the instrument.

"The dial makes one revolution in twenty-four hours, and is divided by concentric circles into degrees of temperature, and by twenty-four radial lines into spaces representing as many hours. The movement of the lever is from the centre towards the circumference; its extremity is armed with an arrangement for marking a legible ink line on the disc, upon which it lightly bears; so that during its revolution, a line is drawn, whose position in reference to the concentric circles marks the temperatures; and in reference to the radial lines, the times of those temperatures.

"The lever permits of being lifted to allow of the disc being changed. The flat under-surface is applied to the body, the other portions being protected from injury by a suitable vulcanite case.

"It is usually applied to the abdomen, being held *in situ* by a broad band of non-conducting material, which also serves to protect the instrument and the skin from being unduly influenced by external temperature variations.

"Being filled with a comparatively incompressible liquid, it is not to an appreciable extent affected by barometrical changes."

It is unfortunate that the price of this instrument is almost prohibitive (£5 5*s*.), as every practitioner should possess at least two or three for every-day use. It is to be hoped, therefore, that Messrs. Salt and Son, of Birmingham, who are the sole licensees, will see their way to produce this invaluable instrument at a reasonable price, so as to place it in the hands of physicians in every part of the world. To the dosimetric practitioner, this instrument is essential, and should always be used in severe cases of fever. Its indications will often enable him to jugulate fever, and thus prevent all dangerous pathological lesions.—H.A.A.

UROSCOPY.

In order to *read a disease* from the examination of the urine, the physician must be acquainted with that liquid in its normal or natural condition, as well as in its abnormal or pathological state.

The normal colour of the urine is yellow, more or less blended with red. This tint is due to a peculiar colouring matter, and indicates health, or in other words, that all the vegetative functions are performed naturally.

This coloration may be absent, as in the pale-coloured urine of chloro-anæmia. It is an indication which confirms the diagnosis, and which requires the administration of arseniate of strychnine and arseniate of iron:—

Two or three granules of each, together, daily.

Dark, high-coloured urine, indicates a heated condition, which demands the employment of the Seidlitz salt and of digitaline:—

A granule every two hours.
A teaspoonful of the Seidlitz salt in a glass of water.

If the test-paper shows a very marked acid state of the urine, benzoic acid and benzoate of soda should be given:—

A granule of each, together, three to four times a-day. In the morning, the Seidlitz salt.

If, on the contrary, the urine is alkaline, containing a considerable quantity of carbonate of ammonia,* phosphoric acid and vegetable acid drinks should be given. If a typhoid condition exists, hypophosphite of strychnine will be required:—

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* Blue and red litmus papers are generally used for testing the alkalinity or acidity of the urine. If the urine is acid, blue litmus paper turns red. On the other hand, red litmus paper turns blue if the urine is alkaline. If the alkalinity is caused by a volatile alkali (ammonia), it may be discriminated from that due to a fixed alkali (potash or soda), by gently heating the test-paper which has been turned blue by the urine, when, if the alkalinity is due to ammonia, the latter will be driven off (being *volatile)*, and the red colour of the paper will be restored.—H.A.A.

A granule every half-hour, until the urine has lost its ammoniacal odour.

Abnormal colorations of the urine (green, blue, violet) indicate an ammoniacal state. They are due to decompositions which take place in the bladder (uroglaucine, urrhodine). They must be treated as above, by the Seidlitz salt and the vegetable acids.

The urine may be of a red colour from admixture with blood (hæmaturia). In this case, the mineral acids must be given, the neutral perchloride in preference:—

Five to six drops in a wine-glass of water, morning, afternoon, and evening.

The urine may exhibit a deposit like coffee-grounds. This indicates decomposition of the red globules beyond the spleen, that is to say, in the renal parenchyma. If the deposit is very abundant, to the point of producing aglobulia of the blood, arseniate of iron and arseniate of strychnine must be given—(Vide *Diatheses.*)

A granule of each, together, four to six times a-day.

Lactescent or chylous urine (vide *Diatheses*) requires the bitters, such as quassine:—

Two or three granules, before meals.

Albumen in the Urine.—1. When the presence of albumen in the urine is suspected, it must be tested for by means of nitric acid. If the quantity of albumen is very considerable, it forms an abundant white precipitate. If the quantity is but small, a test-tube must be filled two-thirds with the urine, and a little of the acid must be allowed to trickle down the inner side of the tube, in such a manner that the acid may reach the bottom of the tube without mixing with the urine. If albumen is present, a cloudy stratum is produced at the junction of the acid and urine, distinctly limited to the two contiguous surfaces.*

2. The urine may be poured into a test-tube, and boiled over the flame of a spirit-lamp, until coagulation of the contained albumen occurs. But this process may give rise to errors; thus, urine which contains no albumen may become turbid by boiling. In a large number of cases, this turbidity is caused by earthy phosphates (as in osteomalacia); such a precipitate is easily recognized, as it dissolves on the addition to the urine of a few drops of nitric acid. The hypophosphites and phosphates of lime will then be given :—

A dozen granules of each, daily.

The turbidity may also be caused by mucus ; the coagulum will be dissipated, in this case, by means of acetic or hydrochloric acid.

If the urine is alkaline, it will not be rendered turbid by boiling; its reaction should, therefore, always be tested before boiling ; if it turns the red litmus paper blue, some drops of acetic acid must be added to it.

Sometimes, but very rarely, the albumen in the urine is not precipitated by boiling, as when it contains a certain quantity of free hydrochloric acid. It must then be neutralised by means of potash (carbonate).

The presence of albumen in the urine, outside of any organic disease—of the kidney or liver—indicates an impoverishment of the blood, principally of its saline and hæmatic elements. These must, therefore, be replaced by a saline regimen, and by the reconstituents: arseniate of strychnine and arseniate of iron :—

A granule of each, together, four to six times a-day.

Fibrin in the Urine.—Fibrin in the urine is the result of exudation; the fibrin of the blood is converted into jelly by means of carbonate of ammonia. Little coagula may become the nuclei of calculi.

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* In doubtful cases, where the amount of albumen is very small, a few drops of solution of corrosive sublimate added to the urine, will form a *most* delicate test, albumen being immediately deposited.—H.A.A.

It is necessary, in this case, to give the vegetable acids, and hypophosphite of strychnine :—

Five to six granules a-day.

The presence of fibrin in the urine often indicates an organic disease of the kidneys. (Bright's disease.)

Fat in the Urine.—The urine sometimes contains fat-globules similar to those seen in broth. Fat which has not been consumed in the economy, is in reality present, and has consequently passed into the urine. The above condition may be also observed in those persons who are taking cod-liver oil.* In this case, the nervine tonics must be given, such as arseniate of strychnine :—

Four to six granules daily.

Fat in the urine may also depend upon a fatty degeneration of the kidneys. Tonics must always be administered.

Sugar in the Urine.—To detect sugar in the urine, the latter may be boiled in a silver spoon, until of a syrupy consistence; polarization may, moreover, be employed.

It is necessary also to ascertain the specific gravity of the urine.

As the quantitative test is long and difficult, the physician, to whom it is sufficient to know with some degree of approximation how much sugar is contained in a diabetic urine, will be able to make use of the following process, based on this fact: that a urine containing sugar, boiled with caustic potash, takes a dark brown or brownish-yellow colour ; and that by the intensity of the coloration, and with the help of a scale of colours, the quantity of sugar may be estimated. In order to establish this scale, a quantity of dried grape sugar (about 2 grammes) is dissolved in 40 or 50c.c. of water, and nearly a double volume of a lixivium of potash sufficiently concentrated is added, and the solution is then boiled for a period of from ten to fifteen minutes. After cooling, as much water as is necessary is added to the dark brown liquid, so that each cubic centimètre of the mixture may contain ten milligrammes of sugar. With this liquid a scale of colour is formed (a scale of a few degrees is sufficient). Ordinary test-tubes may be employed, as much as possible of the same diameter throughout their entire length. The first of these tubes is filled with a mixture formed from one part of the saccharine liquid, and nine parts of water; containing, consequently, 4 milligrammes of sugar in 10c.c. The second tube is filled with this same mixture, to which has been added an equal volume of water. A degree of the scale is then obtained, containing 5 milligrammes of sugar in 10c.c. Into the third tube, and then into the fourth and fifth, liquids are poured, which contain in 10c.c. three, two, and one milligrammes of sugar, etc. A scale composed of from ten to twelve degrees is thus prepared; for that purpose large glass tubes, as much alike as possible, are made choice of; very exact results will, therefore, be obtained. A measured quantity of the urine to be tested is then boiled,* with double its volume of lixivium of potash; after cooling, the liquid is poured into a glass tube similar to those used for the scale, and water is added until the colour coincides with that of one of the degrees of the scale. Since the richness in sugar of each degree of the scale is known, the quantity contained in the sample of urine tested can be easily calculated. This method only requires a few minutes; yet the scale cannot be maintained for a lengthened period; but if the liquid is preserved in a cool and dark place, the scale can be renewed at pleasure.†

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* M. Cl. Bernard observed that when dogs were fed with a large quantity of fat, that substance passed into the urine.

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* About 5c.c. for the urines which are supposed to be rich in sugar, and 10c.c. for those which it is believed contain only a small quantity.

† Every practitioner is acquainted with the other tests for sugar, viz.: *Trommer's Copper Test (Fehling's Solution, or Pavy's Solution)*, the *Fermentation Test*, and the *Bismuth Test*.—H.A.A.

I have stated that sugar in the urine, or in the tissues (diabetes mellitus, or non-mellitus) indicates a fault of combustion, which requires the nervines: phosphoric acid and arseniate of strychnine, together with a saline regimen.

Urinary Sediments.—Crystalline Sediments.—1. *Uric acid and urates.*—Uric acid is a normal element of the urine, but it is only soluble in that liquid, in as far as it is not there in excess.

Uric acid is only found, as a sediment, in very acid urines, and it nearly always co-exists with urates. In the condition of sediment it is never colourless, but pale yellow, usually dark orange-red or brown, according to the degree of acidity. Even to the naked eye, its crystalline condition is apparent *(rhomboidal prisms).*

The sediments of urates have a very variable colour, greyish-white, white, rose-red, reddish-brown or reddish-purple. They are soluble in warm water; it is, therefore, easy to separate them from uric acid, by heating the urine and straining it.

The sediments of urates indicate a febrile state, which requires a cooling treatment: Seidlitz salt, and the alkaloids aconitine and veratrine:—

A granule of each, every half-hour, until the sediment disappears.

Excess of uric acid is peculiar to the gouty and rheumatic diatheses. (*Vide* those diatheses.)

2. *Oxalic acid and oxalates.*—Oxalic acid is only met with in the urine in the form of oxalate of lime. This may give rise to the formation of oxalate of lime or mulberry calculi, as I have previously stated. (Vide *Diatheses.*)

The crystals are usually octohedral in shape (letter-envelope form),* and might be mistaken for the crystals of common salt; but the solubility of this latter is such that it is never met with in the crystallized state in the urine.

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* They may be met with in the form of dumb-bell, ellipsoidal, or reniform crystals.—H.A.A.

The crystals of oxalate of lime are soluble in rather large proportion in the acid phosphate of soda. In oxaluria, therefore, phosphoric acid should be employed. A lemonade composed of one part of phosphoric acid and four parts of raspberry syrup may be prescribed. I stated previously that oxaluria often proceeds from a diet containing too much sugar. (Vide *Diatheses.*)

3. *Earthy phosphates.*—These sediments are composed of phosphate of lime, and of ammonio-magnesian (triple) phosphate. They are very rarely met with separately, they are nearly always united. Because of their solubility in acids—even weak acids—they are only found in alkaline urines, in consequence of fermentation in the bladder, in the ureters, or in the calices, where they sometimes form phosphatic calculi.

Ammonio-magnesian crystals appear in alkaline urines in prismatic forms, similar to the oxalate of lime crystals, but they may be distinguished by being easily dissolved in a solution of acetic acid, which has little or no effect on oxalate of lime.*

The ammonio-magnesian urines require the employment of foods and drinks seasoned with vinegar, which latter is especially suitable for calculi of this kind.

Phosphate of lime is present in the form of an amorphous powder; it is insoluble in water, soluble in acids—even acetic acid—and it is precipitated in the amorphous state from these solutions by the alkalies. It is only met with in feebly acid, neutral or alkaline urine.

The presence of earthy sediments in urine always indicates a state of superalkalinity of that liquid, which must be corrected by the gaseous acidulous mineral waters: Seltzer, Carlsbad, and Vals; but especially by a refreshing regimen (Seidlitz salt).

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* Urinary sediments may be conveniently collected for microscopic examination, in Dobell's "Urinary Sediment Collector," or in a similar *Collector* (made of celluloid, and consequently unbreakable) designed by *myself.*—H.A.A.

4. *Chlorides.—Chloride of sodium in the urine.*—The quantity of common salt eliminated with the urine varies in different persons, and at different times of the day. Nigra made observations on eight individuals, and obtained the following results:—The quantity of chlorine eliminated in twenty-four hours, amounts, on an average, to 10 grammes 46, which corresponds to 17 grammes 5 of chloride of sodium. It is in the afternoon that the elimination of chlorine is the highest, but it diminishes considerably at night, and increases again in the morning. Active exercise increases it; a slight disturbance of the health diminishes it. The proportion of chlorine augments when large quantities of water are drank, but diminishes very rapidly. In several diseases, the quantity of chloride of sodium contained in the urine is considerably diminished, especially in those abundant exudations made at the expense of the blood. In pneumonia, it descends to the minimum. When the urine is deprived of chloride of sodium, it ferments, and parasitic growths are formed in it.

From the above, it may be understood how very necessary common salt (chloride of sodium) is to the economy, not only for progressive, but especially for retrogressive nutrition, since it protects the body against fermentations.

SYNOPTICAL TABLES.

Spermatic Incontinence (Spermatorrhœa).

SUBJECT.—SYMPTOMS.	TREATMENT.	OBSERVATIONS.
23 years.—Vicious habit. Involuntary nocturnal discharges. Abnormal sensibility of the vertebral column, especially at the nape of the neck and in the lumbar region. Erotic fancies. Sudden wakings. Hot skin. Small and quick pulse. Emaciation. Impairment (weakness) of the intellectual faculties. General prostration.	Granules cicutine, phosphoric acid, and sulphate of strychnine; 1 of each, together, four times a-day. In the evening, at bedtime, 1 granule of atropine. Tonic regimen. Cold spongings. Every morning, Seidlitz salt.	This treatment, continued for 15 days, brought about, on the sixth day, a marked diminution of the symptoms. The patient was sent into the country, in order to regain full strength.

NOTE.—In ancient times, the priests, in order to observe continency, took every evening a certain dose of hemlock, because that plant diminishes excitation of the spinal cord, and of the sexual organs. In our day, the *Agnus castus* has been extolled. I cannot affirm how far this plant is efficacious in promoting the above object.

Impotency.

SUBJECT.—SYMPTOMS.	TREATMENT.	OBSERVATIONS.
Age 48.—Formication in the lower extremities. Sensation of heat in the back. Venereal desires. Erections non - persistent. Flabby scrotum. Melancholy, suicidal ideas.	Granules phosphoric acid and arseniate of strychnine; 2 granules of each, in the evening. Cold spongings in the morning, and Seidlitz salt. Saline regimen.	This treatment was continued for two months. At the end of that time. the sexual organs had recovered their turgescence.

NOTE.—Common salt, or chloride of sodium, has been considered at all times as proliferous. The *Symposiac* of Plutarch, in which this question is debated, can be read on the subject:—"Why, it was forbidden the Egyptian priests to take salt with their food." In the works of Bernard de Palissy, an analogous dissertation is found:—"How it is that female mice, in ships loaded with salt, become pregnant without the intervention of the males." Common salt has the effect of promoting the elaboration of the albuminous matters, and consequently of the *sperm*.* Woman, equally, is only apt to conceive in as far as her secretions present a certain degree of saltness. It is this which made Montaigne say: "La beauté de la femme ne doit être ni fade, ni morne, mais assaisonnée de grâce décevante."

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* The fecundating fluid of the male.—H.A.A.

Hæmoptysis.

SUBJECT.—SYMPTOMS.	TREATMENT.	OBSERVATIONS.
Age 24. — Oppression. Jerking cough. Spitting of blood abundantly. Dry skin, red cheeks, swollen face. Hard pulse (125). Feeling of heat in the chest.	Aconitine, digitaline, ergotine; 1 granule of each, together, every half-hour. Application of ice to the chest. Seidlitz salt. Acidulated drinks. Hydroferrocyanate of quinine.	This treatment was continued for 24 hours. The pulse softened, and fell to 95. The cough was calmed, and the spitting of blood ceased. The quinine was administered in order to prevent the return of the hæmoptysis.

Note.—It is known that quinine has a very marked excito-motive action on the capillaries, and arrests transudation of blood. But it acts principally as a febrifuge, or lessens congestion. Non-traumatic hæmorrhages are, generally, periodic, like the menses. It is because the blood is invited in larger quantity to a point that it is arrested there, and transudes through the walls of the vessels, without ulceration or rent being necessary for that purpose. When hæmorrhage is suppletory, it only requires to be moderated if it is too excessive. Aconitine is especially useful in such cases. Blood-letting would be indicated if the pulse continued hard, and if the oppression increased.

Acute Articular Rheumatism.

SUBJECT.—SYMPTOMS.	TREATMENT	OBSERVATIONS.
Age 36.—Fever and persistent articular pains. Violent pains in the right sterno-clavicular articulation. Oppression.	Veratrine, aconitine, digitaline, arseniate of strychnine; a granule of each, alternately, every half-hour.	This treatment was continued for 36 hours, with the result of ameliorating the symptoms, and producing an abundant diuresis.
Pulse hard (120); temperature, 40 2-5°C.	In the evening, 2 granules of chlorhydrate of morphine, and a chloral draught.	Against insomnia.
	Hydroferrocyanate of quinine.	To prevent accessions.

Note.—The efficacy of veratrine in acute articular affections has been extolled, and not without reason; aconitine being conjoined with it, the nervous erethism and vascular orgasm are both calmed at the same time. Rarely is it necessary to push the dose beyond ten to twelve granules in the twelve hours. The sternal articular pains induced the oppression, because of the proximity of the heart and lungs; it was, therefore, necessary to add to the veratrine and aconitine, both digitaline and arseniate of strychnine.

Acute articular rheumatism, as Hufeland says, is an antagonist irritation, provoked by the suppression of the cutaneous perspiration; so that it has two characters: the one dynamic (irritation, destruction of the equilibrium of the forces); and the other material (principles of the perspiration retained). (*Vide Gouty and Rheumatic Diatheses.*)

Hydroferrocyanate of quinine is always necessary in these cases to *prevent accessions.*

Traumatic Cystitis.

SUBJECT.—SYMPTOMS.	TREATMENT.	OBSERVATIONS.
Age 29.—Violent contusion of the hypogastrium. Paleness, general chilliness. Hypogastrium tight and dull. Urine mixed with blood.	Hydroferrocyanate of quinine; 2 granules every half-hour. In the evening, arseniate of strychnine; 1 granule.	Against the nervous prostration, and as an antihæmorrhagic. This treatment was carried out for one day.
Re-action. Pulse, 110; temperature, 40°c. Hypogastrium painful. Urine ammoniacal.	Veratrine, aconitine, digitaline; 1 granule of each every hour.	Against the re-action which supervened on the following day.
Irregular shiverings. Alternations of heat and cold.	Arseniate of quinine; 2 granules every hour.	Against the return of accessions.

Note.—Arseniate of quinine is a sedative of the great sympathetic. It is well known that irritations of the urinary passages determine a paroxysmal fever, often mortal; in these cases, the ganglia of the nervous plexuses are found to be hyperæmic and softened. It is, therefore, important to prevent these paroxysms. In traumatic affections of the urinary passages, the administration of quinine (sulphate, hydroferrocyanate or arseniate) can never be dispensed with.

Puerperal Peritonitis.

SUBJECT.—SYMPTOMS.	TREATMENT.	OBSERVATIONS.
Age 22.—Third day of confinement. General malaise. Irregular shiverings. Pulse small (100). Slight meteorism of the belly. Breasts flabby. Prostration.	Hydroferrocyanate of quinine; 1 granule every half-hour. Cooling drinks. Wadding bandage.	Against the shiverings.
Re-action. Temperature, 40°c.; pulse, 120.	Aconitine, veratrine; 1 granule of each, together, every half-hour.	Against the acute fever.
Vomiting of greenish matters.	Seidlitz salt, to wash out the intestinal canal. Continuation of the aconitine and veratrine.	
Heat of the skin less pungent. Pulse, 117. The hiccough has disappeared. Urine scanty and ammoniacal.	Emollient clysters, digitaline. Hydroferrocyanate of quinine.	To prevent accessions.

Note.—Puerperal peritonitis being an exhaustive or siderative affection, it is necessary at the commencement to administer hydroferrocyanate of quinine; then, when the reaction is conquered by the defervescent alkaloids *(aconitine*, veratrine and digitaline), the quinine must be again resorted to. *The cleansing* of the intestinal tube is necessary because of the greenish *matters*, which would soon begin to ferment.

Coxalgic Fever.

SUBJECT.—SYMPTOMS.	TREATMENT.	OBSERVATIONS.
Age 16.—Violent pain in the left hip. Fever. Pulse, 120; temperature, 39 2-5°c. Thigh emaciated and lengthened.	Digitaline, sulphate of strychnine; a granule of each, every hour.	To prevent effusion into the articulation and elongation of the limb.
Persistence of fever. Temperature, 40°c.	Aconitine, veratrine; a granule of each, every half-hour.	Application of a caustic of Vienna paste on each side of the trochanter.*
Cessation of fever.	Hydroferrocyanate of quinine.	

Note.—Elongation of the limb in coxalgia is not always a sign of arthrocace, but rather of paralysis. Strychnine must, therefore, be administered, for the twitching of the muscles and nerves would increase the fever.

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[*] The application of Vienna caustic has the effect of preventing spontaneous luxation.

Pleurisy.

SUBJECT.—SYMPTOMS.	TREATMENT.	OBSERVATIONS.
Age 23.—Pleuritic patch on the left side, at the height of the fifth intercostal space. Cough dry and jerking. Pulse frequent, full, and bounding, 120; temperature, 41°c.	Cicutine, veratrine; a granule of each, every half-hour. Employment of the scarificator. Thorax rendered immoveable. Seidlitz salt.	This treatment was continued for two days.
Dyspnœa, dulness.	Arseniate of strychnine, digitaline, arseniate of soda, Seidlitz salt.	3rd day.—Against effusion, continued for three days.
Pulse small, irregular. Oscillation of the morning (39°c.) and evening temperature (41°c.).	Hydroferrocyanate of quinine; a granule every half-hour.	9th day.—Against the accessions, continued for two days.
Resolution complete.	Quassine; 4 granules a-day.	12th day.—To increase the digestive powers.

Note.—In pleurisy, the treatment cannot be sufficiently active, because of the rapid progress of the disease. Excessive blood-lettings and counter-stimulants often only increase the general debility and cause effusion, on account of chloro-anæmia.

Capillary Bronchitis.

SUBJECT.—SYMPTOMS.	TREATMENT.	OBSERVATIONS.
Age 18.—Dry cough. Retro-sternal pains. Difficulty of inspiration. Fever. Pulse, 96; temperature, $38\frac{3}{4}$°c.	Leeches, emollients. Aconitine, hyosciamine, strychnine; a granule of each, every half-hour.	
Respiration sibilant. Dry râles. Scanty urine.	Seidlitz salt. Arseniate of strychnine, arseniate of soda, hyosciamine, digitaline; a granule of each, together, every hour.	Against pulmonary engorgement.
Febrile accession in the evening.	Hydroferrocyanate of quinine; 12 granules.*	During the day.
Resolution on the 10th day.	Codeine; 3 granules.	In the evening.

NOTE.—In capillary bronchitis, there are present at the same time, spasm of the bronchi, and pulmonary obstruction. Strychnine and hyosciamine must, therefore, be administered, both together, so as to prevent the bronchitis becoming suffocative.

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* Acute bronchitis, in its second period, proceeds by accessions. If hydroferrocyanate of quinine were not given, there is no doubt that the disease would terminate in acute œdema of the lung, and in death.

Pneumonia.

SUBJECT.—SYMPTOMS.	TREATMENT.	OBSERVATIONS.
Age 36.—Great oppression. Painful cough. Dull pain in the centre of the thorax. Rust-coloured expectoration. Fever. Hard pulse (96). Face injected. Cephalalgia. Temperature, 40°c.	General bleeding. Veratrine, arseniate of strychnine; 1 granule of each, every half-hour. Seidlitz salt.	Against pulmonary obstruction.
Pulmonary engorgement. Sub-crepitant râles. Engorgement of the liver. Congestion of the kidneys. Albuminuria.	Arseniate of soda, digitaline, quassine; 3 granules of each, daily, in 3 doses. Seidlitz salt.	6th day.—Against hepatisation.

NOTE.—Strychnine, at the commencement of pneumonia, is very necessary, as the lungs become obstructed very rapidly. The anatomo-pathologic lesions, which are caused by the disease, are due to blood-stasis and to transudations. It is now understood how these exudations become organized: the plasma contains a crowd of white globules, susceptible of undergoing a histological transformation. The pulmonary tissue takes thus a density incompatible with its function, which requires permeability. This is why, in the second period of pneumonia, it is necessary to give *arseniate* of soda.

Cerebral Meningitis.

SUBJECT.—SYMPTOMS.	TREATMENT.	OBSERVATIONS.
Age 8.—*Prodromes:*—Malaise. Gastric disorder. Bilious state. Constipation. Pains in the limbs and joints.	Seidlitz salt. Veratrine, aconitine; a granule of each, every quarter-of-an-hour.	To refresh the body. To cause the fever to fall.
Period of invasion:—Violent cephalalgia. Insomnia. Dreams. Burning skin (40–41°C.). Pale face. Pulse quick and sharp (120)	Strychnine (sulphate), arseniate of cafeine; a granule of each, every quarter-of-an-hour.	Against cerebral paralysis.
Spasms. Tonic convulsions (*trismus*, *opisthotonos*).	Strychnine, hyosciamine, arseniate of soda; a granule of each, every half-hour, until resolution.	

Note.—Cerebral paralysis precedes general paralysis; it is, therefore, the former which must be prevented by means of strychnine. The cerebral pains being of a neuralgic character, the strychnine must be associated with cafeine.

Tuberculous Meningitis.

SUBJECT.—SYMPTOMS.	TREATMENT.	OBSERVATIONS.
Age 10.—*Invasion:*—Violent pain in the nape of the neck. Strabismus. Contracted pupils. Unilateral convulsions. Insomnia. Dreams. Piercing cries. Fever (40°C.). Pulse small and frequent. Irregular shiverings. Vomitings.	Granules hydroferrocyanate of quinine, phosphoric acid, sulphate of strychnine; 1 of each, every half-hour. Seidlitz salt.	Against cerebral spasm and nervous accessions.
Slackening of the pulse. Lowering of the temperature. Stools and urine involuntary. Cerebral depression. Death.	Arseniate of strychnine; 1 granule every half-hour.	Against cerebral paralysis.

Note.—Tuberculous meningitis is generally mortal; or, if the physician succeeds in moderating it, it terminates in hydrocephalus, idiocy, or epileptiform convulsions. However, the practitioner must employ all the means which science places at his disposal.

Myelitis.

SUBJECT.—SYMPTOMS	TREATMENT.	OBSERVATIONS.
Age 36.—Tactile sensibility exaggerated, especially in the inferior extremities. Painful shocks, irradiating along the spinal nerves. Tinglings. Erotic sensations. (This period may be prolonged for a considerable time.)	Arseniate of soda, cicutine; 1 granule of each, four times a-day. Bromated camphor; 1 granule, morning and night.	To modify the sensibility and the nutrition of the spinal marrow. Against sexual excitement.
Impairment of the movements. Nervous insufficiency. Dyspnœa, dysphagia, dysuria, etc.	Arseniate of strychnine; 1 granule, three times a-day.	To quicken innervation.

Note.—Sclerosis being the consequence of myelitis, it may be easily comprehended that the vital or dynamic incitants are powerless in this last period of the disease. However, as the entire segment of the cord may not be involved, the treatment by the arseniates may still be continued. In this case, recourse should be had to external excitants: moxa, cautery, etc. It is necessary, however, to be very prudent, on account of congestions which might be set up in the already hyperæmic cord.

Neuralgias.

PERIODS.—SYMPTOMS.	TREATMENT.	OBSERVATIONS.
1st period.—Tense or lancinating pains along the nerve attacked. Pulse very strong on the suffering side. Neuralgic fever, proceeding by accessions.	Arseniate of soda, arseniate of quinine, aconitine; 1 granule of each, together, four times a-day.	To modify the nutrition and sensibility of the nerve.
2nd period.—Gradual weakening of the affected part. Locomotor ataxy.	Arseniate of strychnine, arseniate of iron, arseniate of antimony; three to four granules a-day.	Against anæmia. Against the rheumatic diathesis.

Note.—It is the rheumatic diathesis which most frequently produces neuralgic affections; likewise, it is necessary, before all things, to endeavour to modify the nutrition of the diseased nerve. The arseniate of antimony should therefore be given in preference in these cases. It has the effect, particularly, of forwarding interstitial absorption, and of thus preventing sclerosis or hypertrophy of the intercellular substance, with atrophy of the normal histological elements.

Ophthalmias.

SPECIES.	SYMPTOMS.	TREATMENT.	OBSERVATIONS.
Conjunctivitis.	Lachrymation. Dull pain. Paroxysmal fever.	Granules hydroferrocyanate of quinine. Emollients. Afterwards constringents:—zinc, tannin.	Against the paroxysmal fever. Against relaxation of tissue.
Sclerotitis.	Violent lancinating pains. Photophobia.	Arseniate of soda, veratrine, aconitine; 1 granule of each, every hour.	To modify nutrition and sensibility.
Iritis.	Supra-orbital pains. Deformation of the pupil. Vomitings.	Atropine, veratrine. Iodide of mercury.	Against spasm and congestion. Against syphilis.
Choroiditis.	Deformation of images. Amblyopia.	Arseniate of soda. Seidlitz salt.	Against the hæmorrhoidal state.
Retinitis.	Sparks. Scintillations. Muscæ volitantes. Amaurosis.	Phosphoric acid, sulphate of strychnine; increased gradually to 20 granules of each, daily.	Diffusible excitants. Ammonia.

NOTE.—The anatomical localization is here very important, in order to determine the proper treatment.

Laryngitis.

VARIETY.	SYMPTOMS.	TREATMENT.	OBSERVATIONS.
Simple.	Pain in the larynx, on pressure. Hoarse voice. Dry, spasmodic cough. Febrile accession in the evening.	Aconitine, hydroferrocyanate of quinine; 1 granule of each, every half-hour.	To prevent exudations.
Croupal.	Malaise. Anxiety. Whistling respiration. Metallic cough. Paleness of the face during paroxysmal intervals. Small pulse. Dyspnœa.	Granules arseniate of strychnine and arseniate of quinine; 1 granule of each, every half-hour. Sulphide of calcium.	Against the suffocative paroxysms. Against the diphtheria (false membranes).

NOTE.—Croupal laryngitis appears to be due to minute organisms or microscopic ferments (bacteria) of the genus oïdium. It is the same in hooping-cough, which is a paroxysmal laryngitis, and which subsides under the influence of aconitine and hydroferrocyanate of quinine, and which sulphide of calcium greatly modifies, so that the paroxysms are rendered less fatiguing.

Hepatitis.

SUBJECT.—SYMPTOMS.	TREATMENT.	OBSERVATIONS.
Age 46.—Violent pain, increased by superficial contact, irradiating towards the shoulder and the right groin. Deep-seated, dull pains. Jaundiced tint. Vomitings. Constipation. Clayey stools. Paroxysmal fever.	Emollient baths. Cuppings. Leeches. Veratrine; 1 granule, every half-hour.	Against the itching of the skin.
	Seidlitz salt.	To refresh the body.
	Podophyllin, 1 to 2 granules daily; quassine, hyosciamine, 1 granule of each, before meals.	Against the jaundice and constipation.
	Arseniate of quinine.	Against the paroxysmal fever.

NOTE.—Hepatitis has the effect of producing torpor of the liver, and, consequently, is a cause of cholæmia; it is characterised by a depression of the pulse and of the temperature, and often gives rise to very obstinate paroxysmal fevers. In marshy countries, hepatitis very frequently exists on account of the paludal diathesis. Quassine and arseniate of quinine, against the diathesis, and hyosciamine against the icteric spasm, are the remedies indicated in this variety.

Nephritis.

VARIETY.	SYMPTOMS.	TREATMENT.	OBSERVATIONS.
Interstitial.	Renal pains. Scanty and dark-coloured urine. High fever (41°c.). Vomitings. Retraction of the testicle.	Granules arseniate of soda, cicutine, atropine; 1 granule of each, every hour.	Against pain and spasm.
Albuminuric	Fever. Eclampsia. Albuminous urine. Tendency to dropsy.	Veratrine, arseniate of iron; 1 granule of each, every hour.	Against anæmic fever.
Glycosuric	Painful twinges in the kidneys and along the vertebral column. Copious urine (saccharine or non-saccharine). Intense thirst. Hot and dry skin. Marasmus. Consumption.	Saline regimen. Arseniate of iron, digitaline.	Against the attack.
		Arseniate of antimony.	Against the muscular pains.

NOTE.—The doses indicated in these Tables—as elsewhere in the course of this work—are not absolute. It is left to the physician to judge how far the remedies should be pushed. In acute diseases it is always necessary to administer the granules without stopping, till the disease yields; *in chronic* diseases the physician must proceed gradually, allowing eliminative absorption time to act. I say *eliminative,* because morbid products, in order to be eliminated, should first pass into the circulatory current. I except catalyses and the chemical decompositions which take place directly in the blood. But whatever may be the nature of those chemical operations, the intervention of vitality is always necessary. Stahl was right when in order to explain the iatro-chemistry of his day, he invoked vital spirits. Such was, however, the opinion of all the great physicians of antiquity, even of Galen, notwithstanding his humoralism. In the treatment of diseases, vital incitants are therefore necessary. Take for example colitis, or intestinal obstructions, which may proceed to *miserere;* to employ physical agents: such as quicksilver and oils, without recourse at the same time to dynamic agents: such as strychnine and hyosciamine, would be to give a pitiful proof of the physician's medical science; or, rather, it would be but a work of draining.

TREATMENT OF THE WOUNDED.

At the present day, every physician is a surgeon. Without devoting himself to those great operations which are in the province of specialists, he ought to be able to attend to ordinary surgical cases, and to conduct them in such a manner as to prevent complications.

For it is not so much the accident which is the cause of death, as an unintelligent or mercenary treatment.

Every day I see individuals affected with serious injuries, some having undergone terrible operations, and who, nevertheless, escape death by methodical dressings, and by a vital or dynamic medication. (For in surgery, as in medicine, nothing depends on chance ; as in war the victory belongs to him who has taken care to provide against everything, even so the surgeon is successful who considers the vitality of his patient, and provides against all complications. The art of healing is a continual battle against disease.)

In the treatment of the wounded, the *external* measures or dressings, and the *internal* measures or the regimen and medicaments, ought, therefore, to be taken into consideration.

EXTERNAL MEASURES.

DRESSINGS.

We are acquainted with the motto of Ambroise Paré :—

"Je les pançai et Dieu les guérit."

The fact is, that if the great surgeon had not paid so much attention to his wounded patients, very few would have recovered. Called to the siege of Metz, his presence was a true moral re-victualling ; the troops recovered courage, and the siege was raised by the assailants.

Admirable result of science! For it was not a question solely of moral influence; the soldier was aware that if wounded, he would obtain relief, and that the treatment would not be worse than the wound itself.

Before the time of Ambroise Paré, indeed, gun-shot or arquebuse wounds were treated by pouring boiling oil into them, and stuffing with tow.

Before everything, the dressing of wounds ought to aim at the prevention of putrid infection; the most simple wound festers when it is not attended to.

Animals cure themselves of their wounds by licking them; the saliva, which is a slightly alkaline liquid, prevents the wound from drying, and becoming inflamed. It is not, then, the air which irritates wounds, as its drying action. Phthisical patients, when they are made to breathe a moist and warm air, cough less. They experience relief when balsamic vapours are mixed with such an atmosphere.

Every recent wound should, therefore, be treated with lukewarm water; but, on account of evaporation, an impression is made on the wound by cold, and this thus becomes a cause of irritation, which makes its appearance under the form of fever, and of nervous symptoms (*tetanus*).

It is better, therefore, to enclose the wound in a vapourous and emollient medium. This may be effected by covering it with a gummed taffeta, and with a thick layer of wadding.

When the wound is contused, it must be dressed with carbolized linseed oil, in the proportion of two per cent. of carbolic acid. Putrefaction will thus be prevented, and suppuration will be diminished. It is certain that wounds dressed according to Lister's method soon commence to cicatrize.*

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* The microscope gives the reason of this. When a recent wound is observed through a powerful lens, a crowd of corpuscles is seen. If one of these small bodies is placed under the object glass, it is perceived to be a living body, endowed with a peculiar or amœboid movement. By

I ought also to say a word concerning certain resources of modern surgery, which have done so much to banish pain and fear from the operating-theatre.

ANÆSTHESIA.

Before the method of anæsthesia was perfected, it passed through a number of phases; at first ether, then chloroform, then injections of chloral, and lastly the bichloride of methylene, which may be considered as definitive, since with it there is no danger to those patients who undergo operations. Bichloride of methylene does not manifest its action on the heart, like chloroform; the patients fall asleep as in natural slumber; and their countenances remain rosy and bright. It would even appear that the circulation is facilitated. There is not that intermediate period of agitation or intoxication, which appears with chloroform. The surgeon has not, therefore, to occupy himself with his patient: *perinde ac cadaver.*

ARREST OF HÆMORRHAGE.

Formerly, that which impeded the surgeon and compelled him to terminate the operation before he had completed all the necessary details, was more or less of hæmorrhage. Thanks to Esmarch's bandage, he can now operate as though he were in the dissecting room; the operation is also no longer hurried through, it is performed with calmness and reflection. The needful retouchings can also be made, with as much leisure as the tailor trims his cloth.

Before the application of Esmarch's bandage, certain precautions must be taken; thus, as the surgeon repels the blood upward, he must assure himself that there is no danger of producing internal congestion. If the patient is plethoric, it will be an advantage to allow a certain quantity of blood to

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in the practice of all surgeons. M. Alph. Guérin's dressing is a poor reproduction of the irremovable dressings of Larrey père. It was unnecessary to make so much noise, and it was especially unnecessary to involve the scientific responsibility of the Academy of Medicine of Paris in a manifest plagiarism.

escape. The above is so far true, that recently an accoucheur availed himself of Esmarch's bandage, after great loss of blood from flooding in lying-in women. He applied the elastic bandage to each lower extremity, so that the blood being driven from below upward, the circulatory circle was contracted a full third, and thus the vital organs were supplied anew with blood.

When the surgeon operates on limbs in a state of suppuration, the bandage must be applied, at first from above downward, in order to squeeze out all the vitiated blood; and afterwards Esmarch's tourniquet must be applied at the upper portion of the limb, so as to prevent afflux of fresh blood. The above precaution is quite necessary, in order to prevent putrid infection.

CARBOLIZED PULVERIZATIONS.

During the entire duration of the operation, carbolized vapour of water should be projected over the raw surface. This vapour kills the microscopic ferments, so that they are not transformed at a later period into purulent or other corpuscles. When ablation of a cancer is performed, great care is taken that no diseased tissue is left in the wound; but that which cannot be prevented is the infiltration of microscopic ferments; now, it is probable that these organisms cause the cancer to reappear.*

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* I have already had occasion to draw attention to the morphological views of Konheim and Koeliker. M. Béchamp, of Montpellier, has extended them to all organic productions, healthy as well as pathological. Thus, he has shown that the white liquids proceeding from the blood and tissues can become organized, and that these new organizations or *neoplasies* vary according to their nature or composition. The corpuscles, or minute organisms which those liquids contain, are so many germs which multiply by endogenesis, and which, consequently, it is very important to kill on the spot. Such is the object of carbolized pulverizations. It would, therefore, be wrong in all operations not to employ the steam or other atomizer. This apparatus is now made so small, that it can be carried about everywhere. It can equally be used in diphtherias, either of the throat and air-passages, or of the vagina and uterus, making use of a glass or porcelain speculum.

ANIMAL LIGATURES.

The operation being completed, the surgeon proceeds to apply ligatures to the vessels. Formerly, surgeons rested satisfied with tying the principal arteries, and they allowed the oozing from the smaller vessels to be arrested by coagulation: but the coagulated blood which remained in the wound gave rise to putrescence of the stump. It is, therefore, very important that no extravasated blood be permitted to remain in the wound. All oozing vessels must, consequently, be tied, *without distinction.* Those vessels, the mouths of which are gaping, must be seized, and after having isolated them, they must be tied with *catgut* which has been previously soaked in carbolized oil. One of the advantages of these ligatures, is, that they may be left in the wound ; the ends also may be cut off close to the tied vessels. The vessels which cannot be seen, but the presence of which is surmised on account of the oozing of blood, must be seized with the hæmostatic forceps, and a ligature applied to them *en masse.* There need be no fear of including nerve filaments, as these generally follow the principal arteries.

Thus, then, every vessel which oozes must be tied: arteries and veins. When all the ligatures have been applied, the tourniquet (Esmarch's) must be gradually slackened, until the wound ceases to bleed. The wound must then be cleansed with fine sponges soaked in carbolized water, which must be changed each time, so as not to transport the micro-organisms. If the wound presents palish points, it must be painted with a solution of chloride of zinc. This precaution is especially necessary in a case of cancer, or of an ulcer of a malignant nature.*

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* The caustic or chloride of zinc paste of Dr. Canquoin, is well known to the surgeon. That honourable physician, whom his traducers have desired to confound with the quacks, had at first in view only the destruction of diseased tissues. During a recent visit which I had occasion to pay him at Dijon, he assured me that some cancers: those of the mouth, tongue, pharynx, etc., he is satisfied to paint over with carbolic acid. His

The wound must be afterwards dressed in the manner previously described. (Vide *Dressings.*)

INTERNAL MEASURES.

REGIMEN.

The diet of the wounded should be analeptic; that is to say, calculated to refresh and restore the blood. Broths, animal jellies, and milk foods should form the basis of it. By degrees, more solid articles of diet, wine and beer may be allowed.* Formerly, it was the custom to keep wounded patients very low, and thus fever was fostered, and at the same time the danger of morbid absorption was increased. It is necessary to consult before everything the digestive aptitudes of the patient, and to keep the tongue clean by means of the Seidlitz salt; the patient can then be nourished as though in perfect health. I consider this point to be extremely important. A wounded person is not a diseased patient, but he must be prevented from becoming one. In some cases—but rarely—I give decoction of cinchona. I have remarked that this medicament, when it is not well borne, is apt to give rise to diarrhœa, and it thus prevents the administration of nourishing foods. Mucilaginous bitters, such as calumba, are preferable; but quassine may be advantageously substituted for them :—

Three or four granules a-day.

Sleep at night should be solicited by maintaining the regularity of the functions. Narcotics must be abstained from,

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object is thus to destroy the ferments, and thereby to prevent the rapid increase of the cancer. There is nothing, however, to prohibit the employment of the chloride of zinc solution in such cases.

* If wine be indicated, the surgeon should have its administration under perfect control, fixing the daily doses himself, and not allowing the patient to take it *ad libitum*. The St. Raphael Tannin Wine is perhaps the best. The various Maltine preparations may often advantageously replace beer. Rubine or Bark Beer, in moderation, is an excellent substitute for malt liquors. Koumiss is also very beneficial, as well as the fresh juices of grapes and other fruits bottled by Mr. F. Wright, of Kensington, London. (*Vide* "*Medical* Temperance Journal," April, 1882.—H.A.A.

therefore, as much as possible. Nevertheless, in case of need, three or four granules of narceine may be given, which alkaloid, unlike morphine, does not produce constipation.

ANTIFEBRILE TREATMENT.

Tendency to fever must be prevented by the alkaloids. A distinguished surgeon, Chassaignac, was in the habit of administering for some days before every serious operation, the alcoholate of aconite in a potion, in the proportion of two to three grammes daily. This is that preliminary treatment which was called "surgical training," the patient being prepared or trained for the operation, like horses are trained for the race-course.

The practice was judicious, since aconite moderates fever, and it was given for the same reason that we now administer aconitine. However, I will here make a remark concerning *traumatic* fever. This fever ought not to be considered as an extra-physiological reaction, any more than the fever which precedes digestion in delicate persons; it is, on the contrary, a preparation for the work of reparation; moreover, it is not followed by that profound depression which an accession of pathological fever causes; it is usually dispelled by a wholesome moisture of the skin, etc., and by a calm sleep. It is not, then, *that* fever which must be prevented; it is even necessary in some cases; and so salutary was it considered among the ancients, that they even raised altars to the *goddess Fever*, *Febris diva.* Now aconitine, far from preventing this fever, favours it; causes it to be evolved with greater calmness and regularity, and removes all mental agitation, thus enabling the wounded patients to recover from their moral shock, a matter so very necessary to accomplish. But what must be prevented is inflammatory fever, with violent shivering at the commencement; with dry, pungent heat, nervous prostration, and disturbance of all the nutritive functions, especially of the *important* function of digestion. Every elevation of temperature above 39°c., every acceleration of the pulse beyond from 90 to 100, should be energetically checked, not by debilitants, but on the contrary, by the *excito-motors*, in other words, by the defervescent alkaloids. In such cases, aconitine and veratrine should be given :—

A granule of each, together, every half-hour, until sedation.

If the urine is scanty and turbid—like muddy water after a great flood—digitaline should be given :—

A granule every hour, until diuresis.

If the patient is in a condition of great nervous weakness, and is somnolent, arseniate of cafeine must be administered to him:—

Two granules, every half-hour, until the somnolence completely disappears.

I may remark that continuous somnolence in wounded patients, indicates commencing congestion of the brain. Sleep, in order to be physiological or normal, that is to say, reparative, ought to take place periodically. It is even well to keep the patient awake by entertaining him : it is also necessary to allow him to sleep as soon as he begins to feel fatigued. In order to obtain this functional equilibrium, a good alimentation is usually sufficient. The Salernian proverb :—*Somnum post prandium nocuum*, is only true when one gives himself up to the excesses of the table. Moreover, it is then necessary to sleep one's self sober.*

It is most important to restore the normal condition of the blood in a wounded patient, or in one who has undergone an operation. He must, therefore, be nourished as much as possible, by slightly exciting the digestive powers by quassine, and by maintaining the regularity of the bowels by means of the Seidlitz salt.

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* Unfortunately, very many persons of both sexes are addicted to the above not very laudable practice.—H.A.A.

In consequence of the losses which they have sustained, the wounded require a saline diet, so as to restore chloride of sodium to the blood and humours.

I have previously mentioned that chloride of sodium disappears from the urine in most severe inflammations, and after abundant losses. I have related in my little pamphlet: *La longévité humaine ou l'Art de prolonger la vie,** the following anecdote, which indicates great good sense among people, in spite of the prejudices encountered.

THE INTELLIGENT DROVER.

" SALT restores from fatigue ; this is a fact which I picked up on the road, on a certain day when I chanced to fall in with an individual travelling in the same direction as myself. He was a person of boorish appearance, but with an air of intelligence. However, as we walked together, he informed me that he was a drover by occupation, and that he drove cattle destined for the shambles. At first when he commenced driving, his beasts suffered from fatigue, and were frequently obliged to lag behind; 'but now,' he told me, 'they no longer do so, because I have found out the remedy.'

" 'And what is this remedy ?'

" 'It is this : At setting out, I provide myself with a quantity of salt, and when in the evening, on arriving at the halting-place, one of my beasts refuses to drink, I thrust a handful of the salt into its throat ; almost immediately afterwards, the animal drinks and eats ; the following day, it is rested and is able to resume the journey.' "

Simple common sense had, therefore, taught this uncultivated man that which science only became acquainted with at a later date, viz.: that salt is serviceable in the reconstruction of the blood and tissues. A Belgian chemist, M. Bergé, has investigated the action of chloride of sodium on the living organism, and he has proved that when common salt is absent from the plasma of the blood, the fibrin, the albumen, the musculin, and the ostein, that is, all the protein compounds which take part in nutrition, become solidified, and the red globules of the blood also are dissolved. These globules are decomposed in a solution of pure albumen, whereas an albuminous water (like the serum of the blood) containing the hundredth part only of common salt, preserves these globules perfectly, without any alteration. Individuals who are deficient in saline elements in the blood, are pallid, chlorotic, œdematous, and albuminuric; they have little or no appetite, and the secretion of saliva and of gastric juice is diminished. Now, such is the condition of wounded patients, and of those who have undergone operations, when they are fed with too insipid food. It is pleasant, when our good nurses distribute nourishment to our patients, to see them draw liberally on the salt-box.

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* The pedants, generally, hate that which is addressed to the public, if it is not composed in their conceited and often unintelligible language. I leave these medical fops to delight in their rigmaroles. I am one of the people, and I like to converse with the people ; that is why I have written a large number of small treatises on *hygiene*, which I believe have profited the public.

Without recapitulating all that I have previously stated concerning the action of common salt or chloride of sodium on the blood, I may recall the fact that the blood absorbs oxygen in direct proportion to the amount of chloride of sodium it contains; that it stimulates in the same proportion the chemico-physical act of nutrition, and provokes the expulsion through the kidneys, the lungs and the skin, of the nitrogenized principles of the regressive nutrition of the tissues.

The hygiene of the wounded being thus understood and practised, surgery, far from being prejudicial to them, permits them, on the contrary, to obtain a fresh lease of life. Every moment it happens that we receive into our hospital, for textural wounds, lymphatic children, debilitated through labour beyond their strength; some suffering from pulmonary tuberculosis, and who, thanks to a reparative regimen, recover the normal health of their age, but who, alas! on returning to those pandemoniums termed manufactories, and which constitute the necessary accompaniments of civilization, soon lose the health which they had regained in the hospital, and relapse into a condition as bad as before.*

I cannot conclude this chapter relating to the treatment of the wounded, without saying a word concerning purulent infection, or septicæmia. Much that has been advanced on this subject ought to be considered as but simple imagination—most often as the views of not very clear-sighted thinkers—for these vibriones, these bacteria, are innocent of much of the evil with which they are credited.† They are less the cause than the effect, and could answer like the lamb in the fable:—

Comment l'aurai-je fait si je n'étais pas né?

Their existence, however, cannot be disputed. Dr. Beale proved that in animals attacked with the bovine pest (cattle plague), animalcules endowed with a peculiar vital activity, fixed themselves in the mucous membranes, and multiplied there, penetrating, thence, into the blood, producing the nervous disorders which characterise that fever, decomposing the red globules, causing the white globules to burst, and thus leading to derangements or obstructions of the circulation (emboli).

In septicæmia also, animalcules or micro-organisms appear in the wounds, and are attracted there like flies to bodies in a state of decomposition. Whence come these organisms? Are they developed spontaneously? We cannot suppose that they are. Germs are, therefore, present in the air; that is why the latter cannot be sufficiently pure. At the conclusion of the war of 1870, I visited the ambulances at the frontier, and the spectacle that I beheld was far from edifying. It was war in all its horror; putrefactions, not of the dead, but of the living. The wounded were covered with flies to such an extent that they no longer presented the appearance of humanity, and the breath exhaled from their lungs was thoroughly tainted and pestilential. They were, literally, devoured at the same time both interiorly and exteriorly. The surgeons would have given them antiseptics, but there were no arseniates in the medicine chests. Having always with me a pocket pharmacy, I was able to distribute some tubes of arseniate of quinine, which rendered—I have since heard—great services.

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* Children's labour should be sternly prohibited by law. No child under sixteen years of age should be allowed to work in a manufactory, or to pursue any occupation detrimental to proper nutrition and development. (*Vide* an excellent paper on this subject by Mr. Van Houten, "Ueber gesetzliche Maassregeln gegen vorzeitige Kinderarbeit," read at the International Medical Congress, at Amsterdam, in 1879, and published in the "Transactions of the Congress," vol. 1.)—H.A.A.

† *Vide* "Some further Experiments regarding Bacterial Pathology" in "*New* York Medical Record," April 1st, 1882.—H.A.A.

Septic fever should, therefore, be treated like a miasmatic fever, consequently, by arseniate of quinine; and when the accession takes place, aconitine and veratrine should be given to regulate the temperature and the pulse. At the same time, the blood should be refreshed by means of the Seidlitz salt.

If fresh wars should happen to break out,

. . . . Dî, tale omen avertant!

the ambulances would then have to be amply supplied with dosimetric medicaments.*

Why should not physicians adopt a method which is at once sure, expeditious and agreeable, and which does not depart from the principles of Hippocrates, and which permits the vital movements to be directed with as much precision as the horseman guides his steed? Dosimetry is such a system—sure and precise.

And yet, I cannot complain; although dosimetry has only been before the public some ten years, it makes enormous progress every day, as shown by the numerous letters from medical practitioners published in the *Répertoire*, and which will some day serve for the history of this great reform in therapeutics.

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* The French Minister of Marine has lately ordered the vessels of the Navy proceeding to Senegal, to be supplied with dosimetric medicaments. —H.A.A.

Even lately, I received from a well-known practitioner, a letter from which I extract the following passage: "I cannot help admiring the generous and intelligent efforts which you never cease making, with an ardour almost juvenile, to establish therapeutics on a solid and rational basis. When one brings to the success of an idea, excellent in itself, an activity and a conviction as powerful as those which animate you, that idea ought to succeed in spite of all the obstacles which it may encounter. The cause which you defend will triumph in the future."

I replied to this friendly *confrère*, that the task had been rendered easy by the support which physicians in all parts of the globe had willingly given me.

Moreover, this great cause does not depend upon myself, but rather upon the whole medical profession, each member of which great body is well aware that it is his duty to defend the heritage bequeathed to us by our common father, even as he himself had received it from his predecessors. The *Répertoire de Médecine Dosimétrique* may be compared to the votive tables in the temple of Cos: each thinking it his duty there to register his observations.

This Handbook is but a feeble epitome of a doctrine which, from the first day that it appeared, has been received with general approbation.

This doctrine is founded on the rock of truth, and truth is always certain to triumph.

CHANTEAUD SEIDLITZ:

ITS PREPARATION AND ADVANTAGES.

The Seidlitz Salt, or as it is usually called, the Chanteaud Seidlitz, has for its basis anhydrous and purified sulphate of magnesia, associated with a small quantity of bicarbonate of soda and of tartaric acid, so as to render it effervescent, and to facilitate its absorption. It is granulated by means of cane sugar. The sulphate of magnesia, or the salts of commerce, contains organic residues which render it nauseous, without speaking of the danger risked by the absorption of such ferments. Most frequently it is acid; and, as it contains small quantities of alkaline iodides, it forms iodates, the action of which, on the economy, has been shown by M. Melsens to be extremely violent; to this fact may be even attributed the colics which frequently follow its administration. Finally, the almost constant presence of chloride of magnesium renders it very bitter and hygrometric.

In calcining the sulphate of magnesia, in order to make it anhydrous, the chlorides and the iodides, which are volatile, are eliminated, and the calcined magnesia which results from their decomposition, saturates the excess of acid; thus, a perfectly neutral salt is obtained, mixed with an excess of calcined magnesia; it is the latter which gives a milky appearance to solutions of anhydrous Seidlitz.

Calcination, by destroying the organic germs, the iodides, and the chlorides which contaminate the salts of commerce, causes all the inconveniences attached to the employment of those impure salts to disappear. It may be added, that as they are completely deprived of their water, they are rendered purgative in much smaller volume.

The Chanteaud Seidlitz, granulated with the greatest care, is always an identical product. On coming out of special ovens, it is immediately granulated with a slight addition of sugar, which protects it from the influence of the air and conceals the slight bitterness of the neutral salt, whilst its trifling effervescence also renders the solution lighter to the stomach. The great care employed in the manufacture of this very rational fabrication, explains the mildness of its action; the most delicate stomachs, women and children become habituated without reluctance to its even prolonged employment, and if the fashion to use it spreads more and more, chemistry—as can here be seen—is in every respect in harmony with fashion.

Such is the manufacture of this product, one of the finest in the modern pharmaceutical arsenal. It will have been noticed that it forms the basis of all dosimetric treatment, therefore nothing has been neglected in order to render it perfectly pure in its composition, and worthy to take a high place among the other dosimetric medicaments. So many advantages does it present, that physicians will continue to employ it with every confidence, and their patients will very quickly come to the conclusion, feeling the benefits resulting from its use, that it is superior to all other known purgatives ; and it is to be trusted that ere long the public will see the immense danger to life and health arising from the use of the various quack purgatives—" pills, potions, powders "—which are a disgrace to civilization and humanity.

SUMMARY.

A BOOK, however brief it may be, requires a summary. The author should spare the time of his readers, by expressing in a few words that which he desires to relate to them.

To teach them would here be an unbecoming pretension, because I am addressing my equals, practitioners like myself.

This is precisely the reason why I have epitomised my work as much as possible.

The description of the various diseases being familiar to every practitioner, there was no occasion to write on that subject; but it was necessary to demonstrate the nature of disease from the vitalistic point of view.

The physician's tactics must evidently be to measure and to manage the vital forces, much in the same way as a prudent general manages his troops in a hostile country.

The dynamic character of diseases must be especially kept in view.

The whole of therapeutics is included in these three indications: *to sustain the vital powers, to combat fever, and to modify nutrition;* and in the three kinds of agents which correspond to them: *the alkaloids, the metals, and the metalloids.*

In medicine there are no specifics, strictly speaking, but only vital modifiers.

Nature has not provided against what we call *beautiful cases*, that is to say, against the horrors of pathological anatomy; it sufficed her to create the means of preventing them, and to give us the necessary intelligence how and when to use them.

And here let me recall to mind the words of my *confrère*, Amédée Latour, at the risk of appearing wearisome :—

"Real medicine has deviated from its natural paths ; it has lost sight of its noble aim, that of healing or relieving. It has rejected therapeutics. Without therapeutics, however, the physician is only a useless naturalist, passing his life in discovering, classing, and describing the diseases of man. It is therapeutics which elevates and ennobles our art ; by it alone has it an object ; and I may add, that by it alone can this art become a science."

The physician is more than a useless naturalist, he is a sad one, because he has constantly before his eyes the spectacle of his impotency.

Whilst natural history reveals to us life in all its beauty, pathological anatomy places before us the spectacle of death in its various hideous forms, as laid bare at the autopsy.

To jugulate diseases at their commencement, that is what gains the physician the confidence of patients, since knowing the danger of allowing disease to develop, they will seek assistance from art in time. The physician will thus be the family counsellor, guarding the health-interests of his retainers, saving them from the pains and dangers of prolonged and wearisome bodily and mental affections, with as much fidelity and skill as the lawyer guards the property of his clients, and saves them from the vexations and ennui of prolonged and expensive lawsuits.

Dosimetry will bind physicians together in one great brotherhood, and will raise their professional dignity ; promoting greater harmony and good feeling between each member of the fraternity. They will thus know how to avoid the caprices and dishonesty of patients—for a patient who is constantly changing his physician is most often a bad payer.

Medicine is a religion which has *vitalism* for its article of faith. Without *vitalism* there is no salvation ; in other words, *no* possibility of healing.

Organicism is *materialism*, hopeless and despondent—it is a powerless struggle with death.

Nature has everywhere distributed the principle of life ; she has given to animals blind instinct,* and to man conscious intelligence. Why should we account ourselves below the brutes?

It is true that our excesses are against us, our thirst for enjoyment always being unsatiated ; that is the reason why animals living in a savage state have no need of medicine ; they live according to the laws of nature. But since civilization is a danger, we should protect ourselves from its evils by our intelligence.

Epidemics are due to infinitely small organisms (micro-organisms), and must not be considered from the fatalist's point of view.

Let us have knowledge to draw from therapeutics every advantage which it permits. We possess in quinine the anti-miasmatic agent *par excellence* ; here we are not restricted, but have a potent remedy against all paludal conditions. Let us understand how to use the other alkaloids, in as much as they are *vital* agents ; and the metals and metalloids, in as much as they are *physical* agents ; especially let us comprehend that all is not matter in us. "Being dust, we shall return to dust ;" but before that, we have a part to play, a moral duty to perform. Our body is only our material covering—our rags, as a great thinker said—but under these beggar's rags, there is the life which animates. It is from this point of view that all men are equal. Rags or laces, what matters it?

---

* The author of the work "Das Unbewusste" thus defines instinct :—"In this sense it may be said that every instinct is in the last instance by its origin an acquired habit, and the proverb that 'habit is second nature' thus receives the unexpected supplement that habit is also the beginning and origin of the first nature, *i.e.*, of instinct. For it is always habit, *i.e.*, the frequent repetition of the same function, which so firmly impresses the mode of action, however acquired, upon the central organs of the nervous system, that the predisposition thus originated becomes transmissible."—The great French philosopher and naturalist, Lamarck, defined instinct in a somewhat similar manner.—H.A.A.

Medicine is therefore an eminently philosophical science; to be only materialistic would be out of character; it would but be to support Molière's opinion of medicine, who clothed the physicians of his day in the robe of Sganarelle. I have always regretted that that great genius had not a clearer idea of the importance of medicine. He possibly contemplated it from the philosophical point of view of his time, looking with contempt upon those mummeries which so-called physicians had practised from early times, and which no sensible person could encounter without laughing. If we do not desire to pass for the flatterers of death, let us be the ministers of life; and let us understand how to use all the means which nature has so prodigally given us. Let us know how to reason, but let us know, also, how to act.

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ACCORDING TO THE METHOD OF

DR. AD. BURGGRAEVE,

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Member of the Royal Academy of Medicine of Belgium;
Hon. Member of the Société des Médecins Russes of St. Petersburg;
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ACCORDING TO THE

DOSIMETRIC METHOD

OF

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